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Children's early learning environments (i.e., home and child care) influence their school readiness, and parent's investments in these environments help shape children's experiences. Using data from the Early Childhood Longitudinal Study – Birth cohort (ECLS-B), a nationally representative sample of children born in 2001, this study investigates the relationships between parents' academic-related beliefs and expectations and their parenting investments in early learning environments (i.e., use center-based care, quality of child care learning environment, preference for care that prepares children for kindergarten, parent involvement, and quality of the home learning environment). Social exchange and social equity theories are used to frame the study. A series of hierarchical linear regression models indicates that parents' educational expectations are predictive of most indicators of investment except for parent involvement, whereas parents' beliefs about their child's readiness for school were predictive of parents' choice of quality of child care learning environment. The implications of these results for programs aimed towards parents as well as for further research are discussed.

HOW PARENTS' BELIEFS AND EXPECTATIONS INFLUENCE THEIR INVESTMENTS IN CHILDREN'S EARLY LEARNING ENVIRONMENTS: A SOCIAL EXCHANGE PERSPECTIVE

By

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CHAPTER I

INTRODUCTION

School readiness has been shown to be a reliable benchmark of children's school achievements, academic success, and adulthood productivity (Barnett & Camilli, 2002; Farver, Xu, Eppe, & Lonigan, 2006). In fact, various studies show that children who enter formal schooling with the knowledge and skills associated with school success are less likely to be placed in special education classes, more likely to have higher achievement scores in standardized assessments, more likely to complete school, and more likely to become productive participants in the labor market (Barnett & Camilli, 2002; Shriver, National Institute of Child Health and Human Development, NIH, DHHS, 2006).This explains why this concept had driven several policy and programmatic efforts not only in the sector of education but also in poverty alleviation and community development since it became popular in the 1990's.

It is somewhat ironic that poor children who are most at-risk of school failure are likewise more likely to be entering school not ready (Duncan, Ludwig, & Magnuson, 2007). Poverty exposes children to a lot of developmental risks that place their development in peril (McLoyd, 1998). In general, compared to their well-off counterparts, low-income-minority children with less educated parents are more likely to be in lower quality homes, neighborhoods, and child care arrangements; to have less warm and involved parents; and to have parents that are stressed and depressed (Duncan

& Brooks-Gunn, 2000). All of these factors have previously been associated with less than desirable school readiness outcomes (Meyers and Jordan, 2006). On the other hand, research shows that children who attend higher quality child care generally exhibit better cognitive, language, and communication development (Burchinal, Roberts, Riggins, Jr., Zeisel, Neebe, & Bryant, 2000; NICHD and Duncan, 2003). Similarly, warm, supportive, and less aggravated parenting, as well as provision of higher quality home learning experiences has been shown to have direct positive association with children's school readiness and cognitive development (Parker, Boak, Griffin, Ripple, & Peay, 1999).

In the broader context of such macro-level factors as the economy, labor market, social service system, and other cultural and environmental factors, parents' choices and investmentscontribute to the type and quality of contexts that children experience (Hill, 2001; Fontaine, Torre, & Grafwallner, 2006; Farver et al., 2006; Kohen, Leventhal, Dahinten, & McIntosh, 2008). Particularly during the early years, adults are the primary facilitators of children's transactions with the environment, an aspect of parenting generally referred to as gate keeping (Bandura, 2002; Chase-Lansdale, & Pittman, 2002; Duncan, Magnuson, & Ludwig, 2004; Hirshberg, Huang, & Fuller, 2005). Therefore, factors that influence parents' gate keeping decisions and corresponding investments may be directly and indirectly affecting children's development and school readiness outcomes. Families, even poor families do not invest similarly in children. Suppose that amidst poverty or lack in resources that is being experienced by families, those parents with stronger motivations to support children's learning and development invest a larger portion of their resources in child care and nutritious food items? In such cases, a better

understanding of the factors, resources, information, values, and ideologies that shape those parents' decisions and investments in early learning environments can inform interventions that encourage parents to promote their children's early development and readiness for school.

To further explore the associations between select aspects of parental gate keeping and children's development, this study shall examine how parents' expectations about children's achievements and their beliefs in regard to children's school readiness, which here are viewed as motivational factors for investments in children, influence their support of children's early learning and development during the preschool years across two proximal developmental contexts (i.e., child care and home learning environment). Furthermore, it will investigate whether parents' attitudes towards the rewards of parenting influence their investments in children's learning as viewed within the social exchange framework.

CHAPTER II

LITERATURE REVIEW OF PARENTAL INVESTMENT IN SCHOOL READINESS

School readiness is defined conceptually as the level of children's competence in various developmental domains upon entry to formal education that, first, reflects their capacity to learn and second, that predicts their development potentials (Snow, 2006). It has been assessed across different developmental domains, including physical health and nutrition, cognition (including literacy and numeracy dimensions and cognitive processes), social functioning, emotionality, and behavioral development (Snow, 2006). The developmental and neurobiological models of school readiness posit an influence of emotionality and self-regulation on the development of the brain cortex controlling focused and self-regulated learning, which may have implications on the development of higher cognitive functioning and school adaptation (Blair, 2002). These suggest both biological and social precursors of children's school readiness. In this chapter, I review several areas of theoretical and empirical work that have increased our understanding of school readiness, and parents' roles in promoting readiness through investments in the home learning environment and in early childhood education.

A Bio-ecological View of School Readiness

Most recent studies of school readiness are informed by the bio-ecological framework, which acknowledges the influences of proximal processes in children's development, defined as the interactions between individuals and their environment, occurring with increasing complexity as individuals age and grow (Bronfenbrenner, &Morris, 2006). This suggests that children's development is not simply determined by biological factors or by social and physical environments but also by the interaction of both. The influences of proximal processes on development, according to the framework, are contingent to individuals' characteristics, their immediate and distal environments as well as the temporal characteristics of these interactions. The proposition of the bio-ecological framework further suggests that the process or the quality and characteristics of interactions between individuals and the environment are influenced by contexts (Bronfenbrenner & Morris, 2006). Consistent with this proposition, economic disadvantage has become a particular context of interest in many scientific inquiries about children's preparedness for school given how economic disadvantage introduces a host of mediating factors that may affect school readiness. In general low-income children compared to higher income children are more likely to be exposed to low quality child care, low quality home environments, negative parenting behaviors, and disadvantaged neighborhood characteristics determining the nature of their life experience and corresponding learning outcomes (Farver et al., 2006; Fontaine, Torre, & Grafwallner, 2006). Accordingly, different studies showed the relationship of family income and resources to children's early development, specifically how limited resources

impact family context, parenting and parental investments on children and how these impact children's learning outcomes (Vortruba-Drzal, 2003).

Bronfenbrenner's (2006) framework breaks down contexts into several layers of proximity to children's learning and development, with the microsystem (family) being the direct context of interaction and of development. Previously, the home/family environment has been considered the primary developmental context for young children but there has recently been a revolution within families in terms of child rearing structures. The past years have seen increasing predominance of dual earner families and the gradual change of an extended to a more nuclear family structure in contemporary families. As a result, more and more children are experiencing different types of non-parental care whether it is in another home or center-based setting. Thus, the home learning environment and the early learning and education setting have become equally significant milieus that affect children's development.

Time is also a critical component of Bronfenbrenner's bio-ecological theory influencing the interrelations between individuals and their environments. The nature of the physical, environmental and social changes occurring over time and within a particular point in individuals' and their social history have important implications in the individuals' learning and development. The different stages in children's development are differentially important, but the pre-school years being the point of entry into more formal and structured learning have concurrently been a focus of interest when it comes to studies of school readiness (Magnuson, Ruhn, & Waldfogel, 2007). Children's development and capability to adjust in the pre-school level may foreshadow their future

development trajectories; hence the need for a better understanding of what occurs in this period of development in order to provide children and their parents the necessary support, services, and interventions required for optimum result.

Therefore, in the promotion of school readiness, it appears particularly important to understand the needs of children most at-risk of not being ready for school, who in general are children from low-income families. As noted above, the home learning environment and the early learning and education settings are two important contexts of development, as primary settings where development is cultivated. Therefore understanding the characteristics of the home and early learning and education settings that promote optimal development may help towards supporting children's school readiness. Lastly, given that the pre-school period is a transitional stage in children's lives, it is particularly important to study the various changes that occur during this phase of development in order to assist parents in adequately coping and responding to them.

Parents as Gate Keepers of Children

The bio-ecological theory highlights the importance of context in children's development, especially the home and early learning and education setting where most development stimulation occurs in the early stage. Therefore, the factors that place children in particular contexts are important considerations in the study of children's school readiness. In this early stage, children do not decide their context but are largely dependent on their parents and families. Generally, the type and quality of children's early learning and development contexts are determined by their parents' gate keeping, decision making, commitment of support, and use of resources, be it personal/family

resources, community resources, or time. Accordingly, children's school readiness may be directly and indirectly influenced by parents' decisions and investments towards their developmental contexts.

A recurring theme in child development studies is the presence of differences in levels of parental investments according to parents' characteristics and beliefs which seem then to determine the manner and extent to which environmental and contextual factors affect children's development (Vortruba-Drzal, 2003; Kohen et al., 2008; Lahaie, 2008). Specifically, parents' ethnicity, education, cognitive level, language proficiency, mental health, employment, and income status among other factors have been shown to be associated with the quality of children's early learning settings, the quality of the home environment, as well as the level of parents' involvement in children's learning and development. For instance, the decisions about how children are raised, the type of food they eat, the people children interact with, and how information and materials are received from the social and physical environment by children seem to vary according to parents' characteristics and beliefs. However, it is unclear how much of these decisions that parents make in regard to their children's development are determined by their level of resources and how much are influenced by their parenting values and beliefs. This question may even be more pertinent among lower income families that live with very limited resources for meeting basic needs let alone for supporting children's learning. The body of literature that explores parents' choices especially in regard to early care and education settings has seen significant growth concurrent with the growing awareness about the critical importance of school preparedness in children's future.

Human Capital Theory and Parental Investment in Children

Becker's (1992) human capital theory is one of the more widely used frameworks to understand families' investment behaviors in children. The theory applies the economic approach in analyzing various social issues, specifically weighing returns in investment in individuals against investments in their training and education based on their economic productivity. Becker (1992) argues that individuals' behaviors are not solely motivated by self-interest; alternatively, individuals attempt to maximize resources by basing and limiting decisions on the possible consequences of their behaviors through their perception of potentials and weaknesses within themselves or within others. Individuals' behaviors and investments are influenced and limited by income, time, memory, calculating capacity, and available opportunities in the environment.

Fuglini and Yoshikawa's works (2003) applied the human capital theory in investigations about parents' investment behaviors in children. In their work, parental satisfaction is determined by children's future outcomes and productivities (which are in turn products of children's inherent characteristics prior to investments and parents' investments) over the costs of parents' investments throughout the course of children's development. Accordingly, the amount and quality of parents' investments are influenced by parents' wealth as well as their expectations of returns in their investments. As a result, parents who have less wealth will invest less on children compared to parents who have greater wealth. The theory also postulates differences in parents' patterns of investments across different children depending on expectations of returns from individual child, for example between boys and girls. Fuglini and Yoshikawa (2003)

reviewed Berhman (1988) who found that Indian families may invest more on boys during lean seasons due to their perception of boys' greater economic productivity.

Critics of the theory point out that household investment in children may not be consensual and balanced among different family members (Fuglini & Yoshikawa, 2003). In fact, there are evidences that mothers' controlled resources seem to be spent more on children than fathers' controlled resources. Alternative postulations from the theory suggest that investments do not necessarily have to be consensual and balanced such that each family member or each parent may manifest different investment behaviors. This perspective has often been used to assess families' and individuals' material investments, thus, findings have often pointed to material resources as a major determinant of investment decisions. However, the increase in public interest and investment on children's development in recent years has increased the availability of welfare and social services, as well as other community and social resources that families may have access to, to invest on children. That is, given proper motivation, even with limited resources, parents may invest in children's development. Thus, recent conceptualizations of investment in regard to children's development are not limited to material resources and in fact, research shows that other aspects of parenting likewise positively influence children's developmental outcomes (Fuglini & Yoshikawa, 2003).

School Readiness, Parenting and the Home Learning Environment

The quality of the home environment has been known to explain the relationships between income and children's developmental outcomes. For example, there is evidence that income influences parenting behaviors and investments in developmentally-

supportive home environment(e.g., how often parents read to the child, teach child about numbers, shapes, and colors) as well as the nature of parents and children's interactions at home that directly link to development (Vortruba-Drzal, 2003). The Vortruba-Drzal (2003) study further demonstrates a non-linear relationship between income changes and home environment quality, where increases in income were more beneficial to lower income families' home environment quality compared to higher income families. Bingham (2007) found that apart from family resources, parents' beliefs, specifically mothers' literacy beliefs influence children's home learning environments (e.g., in terms of the number of books that parents purchase and the time they spend with their child reading). Mothers who place high value on reading and literacy tend to implement more literacy promotional behaviors at home and accordingly, their children manifest higher levels of literacy in the early years of development.

Moreover, Lahie (2008) found that parents' involvement in children's education and learning at home significantly increases children's developmental outcomes and school achievements. The author reported that having books, videos, pictures, story-telling, reading activities, and singing at home was associated with lower achievement gaps between children of natives and immigrants by -2.39 to -1.66 points. In a study drawn from the National Early Head Start Research and Evaluation Project (EHS Study) looking at fathers and mothers' involvement and intrusiveness, Cabrera (2007) found that fathers' engagement has significant effects on young children's cognitive and socio-emotional development over and above mothers' engagement and family resources. Specifically, fathers who have better education and income, who are also most likely to

have higher supportiveness and lower intrusiveness within the father-child interaction, tend to have children scoring higher on language tests and measures of socio-emotional regulation. On the other hand, the study found negative effects of parental intrusiveness on children's cognitive and socio-emotional outcomes contingent to children's age with older children showing more negative outcomes. The author suggests that the result may be due to older children's increased need for autonomy and independence. Interestingly, Cabrera (2007) also found that family resources matter more for older children than younger ones, which they assume to be because of older children's need for more stimulating environment and experiences. These reviews suggest that the quality and structure of the home learning environment as well as the nature of learning-focused parent-child interactions at home influence children's school readiness.

School Readiness and the Pre-school Experience

Early learning and education setting has increasingly become a context of learning and development-focused interaction for children. As a result, its influence on children's development and school readiness has been scrutinized. It has been shown that the impact of early education setting on children's early learning and development varies according to type of early education setting; quality of care as measured by aspects of the environment, provider-child interactions, and providers' training and education; and levels of parental involvement.

Using the Early Childhood Longitudinal Study-Kindergarten (ECLS-K) kindergarten cohort data, Magnuson et al., (2007) found greater positive effects of pre-school on children's reading and mathematics skills compared to other types of early

education setting (i.e., relative or non-relative care, and Head Start). The term pre-school was used to refer to all center-based care because respondents generally refer to center-based care as preschool or prekindergarten. The study found that Head Start participation has negligible effects on test-scores, but due to the cumulative disadvantage of Head Start participants compared to pre-school attendees in the sample, the researchers found it prudent to be cautious in the interpretation of this result. Generally, there has been support that pre-school children who attend center-based care manifest more positive outcomes compared to children who experience other forms of non-parental care.

Increasingly, research has suggested that apart from the type of care, quality of care is related to children's cognitive outcomes. A longitudinal study of 89 African American children ages 6 to 36 months showed that the global pre-school center quality, (as measured by the Early Childhood Environmental Rating Scale-Revised; Harms, Clifford, & Cryer, 1998) has strong positive associations with children's cognitive, language, and communication development and the effect can be sustained over time (Burchinal et al., 2000). On the other hand there are studies showing that the effects of early education setting quality are modest and smaller than the effects of family characteristics but nevertheless noteworthy(Shriver, National Institute of Child Health and Human Development, NIH, DHHS, 2006).Moreover, the Burchinal and colleagues study (2000) did not find support for the buffering effect of high quality care for children in high poverty nor did they find support that low quality center care exacerbates the effects of high poverty. Therefore in supporting the school readiness of low-income

children, increasing access to high quality early education needs to come hand in hand with interventions that address poverty, home and family issues.

It is however comforting that participation in low quality early education setting does not seem to exacerbate the negative effects of high poverty on children's development given that children in high poverty are most likely to be in this type care. This by no means advocates for low quality early education given the catch up game that low-income children need to play against their better-off peers. A collaborative study by the National Institute of Child Health and Human Development (NICHD) and Duncan (2003) showed that a 1 SD increase in the quality of the childrearing environments as measured by the Observational Record of the Caregiving Environment (ORCE) was predictive of a .9 to 1.7 increase in children's cognitive development with an effect size of .06. A 1 SD increase in quality is also associated with a .9 to 1.1 increase in children's school achievements. Moreover, it has also been shown that the quality of care as determined by teachers and early education providers' training and education regardless of their operationalization have also been shown to relate to children's math and other basic skills (Woodcock Johnson applied problems) (Early, Bryant, Pianta, Clifford, Burchinal, Ritchie, Howes, & Barbarin, 2006). However, the same study did not find consistent associations between teachers' education and child care quality(ECERS) (Early et al., 2006).

Quantity of care is another dimension of early education that has attracted experts' interests and attention. There are competing beliefs about the influences of the quantity early education on children's outcomes. One side argues that the amount of time

spent in an early education setting for the first 4 years of life is unrelated to cognitive and language development and negatively associated with socio-emotional development and secure attachment (Shriver et al., 2006). On the contrary, others find more persistent positive outcomes for children who experienced intensive high quality early education early on in life (Barnett & Camilli, 2002; National Research Council and Institute of Medicine, 2001).

Parental involvement in schools and children's early education settings has been shown to have positive effects on children's school readiness outcomes. Lahaie (2008) found that kindergarten children, of parents who have seen teachers at least once showed an increase of 3.5 points in math scores. The author found that parental involvement is most beneficial to children of immigrant parents who speak English as a second language. Lastly, in a longitudinal study of 179 Head Start mothers from 1991-1992, Lamb, Boak, Griffin, Ripple, and Peay (1999) found that increased parental involvement in Head Start activities, workshop for parents, and policy making endeavors resulted in more positive parenting and parent-child interaction at home. Moreover, parental involvement also resulted in increased quality of the home learning environment by increasing parents understanding of play, parents learning to employ more learning related activities at home, and using more learning relevant play materials at home. These changes have been shown to positively impact children's cognitive, social, and behavioral adjustments in pre-school. Therefore, parental involvement in early education and pre-school not only improves children's outcomes in the center but can also improve parent-child interactions and dynamics at home. In summary, it appears that the

dimensions of the child care context that are most consistently predictive of children's school readiness are the type of care setting, early education quality, and parental involvement in children's progress.

Parental Decision-Making about Children's Early Learning and Education

As noted above, one of the ways by which parents' influence children's development is by acting as 'gate-keepers', providing or restricting access to certain contexts. In trying to understand the link between parental investments, early education settings and school readiness, it is important to consider the process by which parents select different early care and education settings for their children. Empirical work on this topic has identified several factors which appear to influence parents' decisions about children's early education and learning including levels of income, education, and employment; parents' characteristics, beliefs, and values; and children's characteristics and levels of development.

Access and availability as determinants of parents' choice of child care. Parents appear to make child care decisions subject to a variety of options, availability of resources, other limitations presented by the social system, and contingent to their belief systems (Hofferth, Chaplin, Wissoker, & Robins, 1996). Different investigations have attempted to determine which of these factors may be the strongest determinant of parents' decisions and investments on children. Davis and Connelly (2005) found a significant influence of child care market price and availability on the choice of type of child care. Furthermore, Shlay et al., (2005) found that parents may desire high quality care but find that this type of care is both inaccessible and unaffordable within their

community, as affordability is highly correlated with supply. High center care prices and lack of affordable quality care in neighborhoods may prompt parents to make use of non-formal child care regardless of their preferences. This suggests the primacy of market supply, service cost, and parents' resources on choice over parents' preferences, which is consistent with the propositions of the human capital framework. On the other hand, Shlay et al. (2005) found that parents may perceive some child care characteristics to be more important and attach high monetary value on such characteristics but concomitantly be unwilling to pay for them depending on how highly those characteristics rank in their priorities. Therefore, it appears that more than simply the matter of service costs; parents consider several quality criteria in selecting care arrangements, which are dependent on their parenting beliefs and ideologies. For instance, parents who believe young children must be nurtured at home by their own parents may prefer to keep their children at home instead of using formal child care despite exposure to information of the benefits of formal care. On the other hand, Meyer and Jordan (2006) found that parents will choose center-based care arrangements [for preschool-aged children] among all other options if they are of comparable cost. There remain inconsistent findings in regard to the actual effect of child care price, good care availability, and wealth in parents' choice to use child care but it seems to remain to be one of the strongest predictors of choice.

Parents' characteristics, beliefs, and their choice of child care. Studies reveal how different parents show preference for certain types of and characteristics of child care arrangements, although some of these studies do not go in depth in regard to the rationalization of the choice. Specifically, parents' ethnicity, education, income,

employment, and beliefs are some factors that have been looked at in relation to selection of child care. In looking at minority parents' decision making in choosing types of child care, Hirshberg, Huang, and Fuller (2006) found that parents' ethnicity, education, hours of employment, and family income predicts parents' propensity to choose non-parental child care. Parents of children age 0-5 years, of Latino and Vietnamese descent, parents with fewer working hours, with lower income, and less education are less likely to use center-based care than home-based or relative care. A qualitative study showed that ethnicity, particularly among parents belonging to minority groups, is associated with preferences regarding caregiver's ethnicity and the racial mix of children within the care setting (Uttal, 1997). It appears that parents are more trusting of caregivers who have the same sets of child-rearing and cultural beliefs. Moreover, worry over possible racial discrimination towards their children may lead minority parents who reside in generally white communities to choose settings with a more with racially diverse group of children.

Rose and Elicker (2008) found that the association between ethnicity and child care decisions disappears once maternal education and income are added in the equation. They found that parents with more education tend to consider play-based curricula and care-giver warmth their greatest priority. It also appears that mothers with high school to college level education prefer academic-based curricula compared to parents with graduate degrees. Furthermore, mothers with lower income place more importance on low-cost care, whereas middle-income mothers prefer middle-cost care that are near their place of work and residence compared to parents with the highest income level. It appears that family and parental characteristics influence choice of child care because of

differences in parenting beliefs across levels of characteristics. That is, belonging to a particular ethnic group and socio-economic level suggests differences in values, belief systems, ideologies, and parenting orientations among others that subsequently result in differences in parenting practices, behaviors, and decisions.

Parents may be utilizing a different set of quality standards when choosing childcare arrangements compared to those adhered to by child development professionals. Exploration of the standards that parents consider reveals different sets of priorities and considerations. Use of child care may be child development-focused or employment focused (Blau, 2002). For some parents, child care may serve primarily as a means to facilitate employment; other parents may rely on child care to augment their children's development, whereas for some, the intent may be to achieve both goals. Depending on the intent of the use of child care, parents may prefer some settings to others according to practical (affordability and accessibility) or standard based (curriculum, adult-child ratio etc) considerations. Even parents who make use of childcare for child development purposes prioritize and value different aspects of quality. Kim and Fram (2009) used latent class analysis in an attempt to generate broad categories of choice considerations that parents prioritize when deciding on a childcare arrangement. Their analysis revealed four categories, which they identified as learning- focused, practicality-focused, an "everything's important" category and a "something else" category. Learning-focused parents lend primacy to center curriculum, learning environments and standards adherence; practicality focused parents attach value to low-

cost and accessible settings; ‘everything important’ parents desire both criteria; whereas ‘something else’ parents consider safety and care-giver warmth as most important.

Furthermore, Kim and Fram (2009) identified general dimensions of parents’ criterions in selecting child care which relate to parental characteristics and demographics. They found that parents who have the education, economic, and structural wherewithal to be selective of their child care choice tend to prioritize development and learning focused criterions. These parents choose child care characteristics that can support their children’s developmental needs at the time. On the other hand, parents who are economically and structurally constrained in their choice are more likely to emphasize practicality factors over development related factors. These parents will likely compromise quality criterion for accessibility and affordability. Lastly, Kim and Fram (2009) found another two sets of parents with one group finding everything important; this group seems to consist of very low education and low income groups. The last group appears to value some other aspect of quality as important, which parents associated with child age. Contrary to the child care selection process that Kim and Fram (2009) projected, Meyers and Jordan (2006) propose that child care selection is a process of accommodation; accommodation of development focused criterions, practical considerations, and the limitation of information that parents use to make decisions. Essentially, these authors are suggesting that all parents make trade-offs given the restrictions of what they know, what they have, and what the environment offers.

Children’s characteristics and parents’ choice of child care. Children’s characteristics such as their age, temperament, and level of development seem to also influence parents’

decisions making process when selecting child care. Gamble, Ewing, and Wilhelm (2009) found from their survey of 2,290 parents that parents use more child centered criterions when choosing child care settings compared to structural, schedule, and logistic considerations. Parents appear to be very conscious of how various child care options might contribute to their children's school readiness and development. However, the use of development and education-based criterions in the selection process is contingent to children's age, where parents of older children are more likely to consider center and curriculum based care as opposed to parents of younger children. Parents of younger children tend to prioritize similarities in child-rearing beliefs and caregivers' warmth and interaction with children when selecting child care. This seem to be because parents of younger children feel that their children are not ready for an academic oriented curriculums. For instance, parents' perception of children's difficult temperament was shown to be associated with less value on school readiness and curriculum issues as a factor when selecting child care. Particularly, the level of children's shyness and immaturity were both negatively correlated with the level of priority that parents attached to school readiness as a factor in choosing child care. Parents' assessment of their children's ability to focus was another dimension of temperament that was associated with lesser value on curriculum concerns.

Current Gaps in our Knowledge of Parental Decision-Making about Child Care

The human capital framework provides a reasonable explanation for how parents make decisions about child care investments, and research supports that parents make care decisions within specific child care markets that are dependent on the relationship of

supply and demand and their own purchasing power. Yet several lines of research suggest that parental decisions and actions are influenced by other factors beyond their level of resources. For instance, Blau (2001/2002) found that although parents appear to have preferences for high quality care settings and are constrained by their purchasing power and access to such services, any decrease in price or additional supply seems to not have effects on demand. Blau (2001/2002) proposed that this trend may be due to dissonance in parents' and experts' definition of quality and the discrepancy between the additional supply of "quality" in the child care market and the actual characteristics for which there are demands. As was previously reviewed, Gamble, Ewing, and Wilhlem (2009) found that children's developmental status influences parents' criterion for child care characteristics. They found that parents who perceive their children to be more temperamental or unable to focus in activities tend to downplay school readiness and curriculum criterions when selecting child care, and yet they still identify quality of care curriculum as an important factor when selecting care settings. It was beyond the research parameter to determine whether these findings were because of parents seeking other care characteristics for their children such as positive caregiver-child interactions and higher adult-child ratios; or parents downplaying characteristics of care that support developmental domains where their children are least likely to succeed. These findings may suggest other dimensions and aspects of parental decision making that have not been explored given the current pathways that are being considered.

As another indication that parents' decisions may not depend solely on market forces and financial resource, studies have shown that parents often choose arrangements

that are most beneficial to their children's development over and above child care costs, depending on their motivation to support development. Differences in child care preferences according to parents' income, education, ethnicity, and children's characteristics suggest rationalization within parents' decisions that are beyond family resources and service availability and more about family processes and ideologies. Although explorations of this subject have revealed interesting and useful information about parents' decision making, questions remain and the scope of factors influencing parents' selection of child care may be wider than has been previously considered. Parents' cultural backgrounds, set of beliefs, and motivations are just a few of the factors that may also influence parents' choice of child care arrangements.

Parents' expectations for children in cultural context as a determinant of investments. One dimension of choice which has not been fully explored in the literature is the influence of parental expectations for children's development. Parents' expectations, which have been conceptualized in some studies as parents' aspirations for their children's school achievements and future employment, have been associated with children's school readiness outcomes. Hill (2001) found that parents' academic expectations are positively correlated with children's pre-reading and math scores; meanwhile, expectations of children's future employment outcomes were associated with pre-reading but not math scores. Unfortunately, given the cross-sectional nature of the data, the researchers were not able to determine if parental expectations reflect children's capabilities or whether children's capabilities reflect their parents' expectations. It is possible that parents of children manifesting advanced development expect more from

their children, that children may persevere to live up to their parents' expectations, or that parents may be investing and supporting their children more to help them live up to their expectations.

Chao (1996) explored determinants of differences between Chinese-American and European-American students' academic performances and found Chinese-American students tend to generally score higher on standardized intelligence assessment tests. She found that these differences are associated with the different values that Chinese and European-American parents place on education and the corresponding expectations they have for their children's education. Chinese parents have higher expectations in regard to their children's academic achievements and consequently tend to be more involved with their children's academic careers. Chinese parents are more willing to relocate neighborhoods; separate the family for better educational opportunities, and sacrifice larger portions of the family resources on children's education. As a consequence, Chao (1996) suggests that Chinese parents' needs for support and child development services are camouflaged by their greater family sacrifices. On the other hand, this study found that European-American parents focus less on academic achievement as the central goal of education and instead value that their children find learning and development a fun experience. Also, more than academic skills, they emphasize the importance of the development of their children's socio-emotional skills. Therefore, European-American parents may not be as involved in their children's academic career as their Chinese counterparts. Chao (1996) suggests that parenting beliefs shape parents' expectations that then shape parent-child interaction and parents' development supportive behaviors.

Ewing and Wilhlem (2009) argue that children's characteristics also shape expectations and parents' subsequent choice of child care. They found that parents' low expectations of children's success in centers using academic-based curricula are associated with parents' lower preference for such setting. Therefore, parenting beliefs and expectations as well as children's characteristics may be influencing parents' decisions on investments. It may be likely that the interaction between parents' expectations and their assessments of children's characteristics ultimately determine how much effort they place in support of development.

The influence of parents' expectations on child development investments may be particularly salient among parents with a more collectivist orientation (Benokraitis, 2002). This may be because families with collectivist orientations have greater adherence to filial piety, or the expectations for children to uphold the family name and to take care of their parents in old age. Accordingly, there is more at stake for parents in investing on children given that the goal and outcome of investments in children affect the entire family and even the community. Lee, Peek, and Coward (1998) found that African American parents have higher filial piety expectations as compared to European-American parents while controlling for socio-economic characteristics. The same higher filial piety expectations were observed from African-American children and other extended family members. In looking at Asian families, Benokraitis (2002) mentioned that having children is a form of insurance for financial stability especially after parents' retirement. In this context, raising children and supporting their growth and development may be literally considered as financial investments that support not only children's

future, but families' stability in as well. Asian and Hispanic families are generally known to have higher collectivist orientations (Benokraitis, 2002). Even though Asian and Hispanic mothers may have similarly higher collectivist orientation than other ethnic and racial groups, each may have different beliefs about the purpose and goal of child care that may concomitantly influence their child care investment/involvement. This suggests that parents' expectations may differ across different cultural backgrounds. Chao (1996) illustrated how Chinese mothers emphasize academic achievement as an important goal for their children whereas Uttal (1997) found that Mexican-American/Hispanic mothers place value on cultural socialization and their children being raised by care-givers with the same child-rearing and cultural values as their own.

The connection between investments at home and in early care and education settings. Another area of parental decision-making that has been relatively unexplored is whether (and how) parents link investments at home with investments in out-of-home settings. To what extent are decisions about investments in one domain related to investments in the other? Wise (2002) emphasized the significance of the continuity of quality and development support initiatives from the home to child care and vice versa in order to adequately address children's developmental needs. Therefore, in exploring parents' investment decisions, it will be interesting to find how they allocate investments within the home and child care settings. Folbre (2006) argues that parents' involvement and investments in the home are more complementary than supplementary to their child care investments. For instance, child care investments should not completely replace parents' involvement in children's development at home. On the contrary, the two

settings must provide continuity of experiences for children. Accordingly, family time, parents' work with children at home, and parental investments in the home learning structure must be acknowledged and counted as child development investments as much as their more institutional child care investments, justifying support for parents at home such as work-time flexibility, leaves, etc. Although there have been studies about the quality of the home environment and its effects on children's early learning outcomes (Virtruba-Drazal, 2003; Brooks-Gunn, Klebanov, & Duncan, 1996) there is a dearth of information about parents' decision making in regard this type of investment.

CHAPTER III

APPLYING SOCIAL EXCHANGE THEORY TO THE TOPIC OF PARENTAL INVESTMENT IN EARLY LEARNING ENVIRONMENTS

The previous chapter presents a discussion of existing perspectives and literature that expand our understanding of school readiness and the different factors that influence it. It also introduces the association between investments in children's early learning and development and parents' beliefs and expectations. This chapter explores these associations using the social exchange perspective.

Considering Parental Investments from a Social Exchange Perspective

The notion that parents' investments in children are a function of their expectations for future rewards and their beliefs about their child's abilities and potential for success (in this case, preparedness for kindergarten) is consistent with two theoretical frameworks not often applied to the topic of parenting, social exchange and equity theory. The social exchange perspective is anchored upon the belief that human behaviors are motivated by self interests (Sabatelli & Shehan, 1993). It views relationships as a process of exchanges of rewards that are valued by interacting individuals. That is,

behaviors are expressed and exercised towards the pursuance of a valued reward given out by other individuals. The concept of rewards is defined as any commodity, material or symbols that can be transferred within an interpersonal relationship that can in turn enable other individuals to provide rewards (Sabatelli & Shehan, 1993). Within the parent-child relationship, children's developmental outcomes, school preparedness, and future achievements can be equated as parental rewards or children's rewards given out to their parents, which can also be called parenting outcomes in the social exchange discourse. Accordingly, any material and non-material support that parents put in to support children's learning and developmental outcomes can be referred to as parenting costs or investments. In the social exchange parlance, parents' investments are in turn children's rewards given by parents. Additionally, children's outcomes can be a source of parental satisfaction, which in the social exchange discourse may be measured as the ratio between investments and outcomes (Henry,& Peterson, 1995).

The social exchange framework has been applied most frequently in the study of dyadic interactions (primarily intimate romantic relationships with occasional application to parent-child relationships) given that it highlights factors that contribute to the development, dynamics, and stability of dyadic and extra-dyadic interactions (Prins, Buunk & VanYperen, 1993; Sabatelli, &Shehan, 1993). Sporadically, the social exchange framework has been used to look at adult children and aging parents' exchange relationships, specifically the financial, psychological, and emotional costs and rewards of taking care of aging family members or parents (Raschick & Ingersoll-Dayton, 2004). It is very rare to see the framework applied to study parent-child interactions in the early

years given the perspectives' focus on interdependence and mutual exchanges. This may be because of the seemingly unequal or one-sided exchanges between parents and children in the early years. Moreover, parenting may be socially defined and viewed as altruistic and self-sacrificing, where parents do not expect compensation from their children. In the exchange perspective, however, reciprocal exchange, which refers to the concept where individuals' rewards in an aspect of interaction are equal to the rewards that were given out, is the foundation of a stable relationship.

In one study, Braver and colleagues (1993) used the social exchange framework to study non-custodial fathers' involvement and provision of support to their children. They posit that non-custodial fathers decide on their levels of involvement and support for their children according to their perception of rewards over cost of continued involvement. Therefore the greater the perception of rewards and the lesser the cost of continued involvement, the greater fathers' level of involvement may be anticipated. For the analysis, the authors used Levinger's (1979) variant of the social exchange framework where it was posited that rewards are of two varieties, the advantages of continuing a relationship and the disadvantages of terminating it. Costs are conceptualized in the same way; there can be disadvantages to maintaining a relationship as well as advantages of terminating it. Study results indicating that fathers who perceive greater control over their children's upbringing and their developmental outcomes manifested greater involvement and support are consistent with a social exchange perspective (Braver et al., 1993).

One major assumption of the social exchange framework is that within interactions, human beings seek to maximize personal profits while minimizing costs (Sabatelli, &Shehan, 1993). This suggests that individuals may pursue behaviors that increase personal rewards and satisfaction meanwhile discontinuing behaviors that are costly or dissatisfying. However, given than individuals can only monitor their own investments and actions, they use their expectations for rewards to determine their behaviors instead of the actual values of exchanged commodities or symbols (Sabatelli, & Shehan, 1993). Accordingly, parental behaviors (i.e., investing on their children's development) may be motivated by expectations of parental rewards (children's academic achievements) and beliefs about the achievement of satisfaction (realization of children's development). Henry and Peterson (1995) found that parental satisfaction of both mothers and fathers is positively correlated with perception of parental support or their ability to be affectionate and responsive to their children's needs. Furthermore, parental satisfaction is associated with parents' perception of their adolescent children's social competence. Along this line, we can assume that parent's investments such as choice to use child care and to get involved in children's development/education may be motivated by their perceptions of parental rewards, or the realization of parental expectations given how those expectations project family honor and security. Therefore, the more that parents expect their children to meet their expectations, the higher their parenting investments may be. All of these tenets are consistent with another social exchange assumption that human beings use all available information to make their decisions and often choose alternatives that offer the best profit (Sabatelli, &Shehan, 1993).

In a research study, Kowalski (2007) explored the relationship between mothers' perceptions of parental roles and their well-being. The results showed that the parenting experience is both rewarding and stressful all at the same time. Mothers who experienced high rewards and high concerns can still score high on several aspects of well-being (Kowalski, 2009). This suggests that although parenting maybe stressful, awareness of parenting rewards can buffer the effects of parenting concerns on mothers' well-being. Accordingly, parents who are more aware of parenting rewards and benefits over and above the cost and stress of parenting may display more positive parenting motivations and behaviors. Conversely, parents who do not perceive the rewards of parenting, or who assess those rewards to be incongruent to investments may manifest greater distress and dissatisfaction. On the other hand, expression of distress over parental investments may be due to some incongruence between parents' expectations and their capability to provide support to children in order to realize those expectations.

Parental Investment and Exchange Orientation

Murstein (1987) proposes that the influence of the perceptions and expectations of costs and rewards to behaviors may vary according to individuals' exchange orientation. Exchange orientation is an equity framework construct that refers to the set of beliefs, values, expectations, and relationship dynamics that individuals attach to different types of relationships (Sabatelli, &Shehan, 1993). Specifically, exchange orientation refers to an individual's disposition to expect and monitor reciprocity within close relationships (Prins, Buunk & VanYperen, 1993). Murstein (1987) proposes that individuals can be placed in a continuum of exchange orientation. Individuals with high exchange

orientation may be characterized by higher awareness and monitoring of relationship reciprocity and are most likely to manifest dissatisfaction and role restriction over any imbalance in the exchange relationship. Meanwhile low exchange orientation individuals may be characterized by low expectations of returns and simply demonstrate a general concern for the good of others. In a study about the likelihood of committing marital infidelity, Prins et al., (1993) found that the possibility of infidelity in romantic relationships has a positive association with exchange orientation. That is, individuals who monitor partners' fidelity and commitment, tend to display greater dissatisfaction about the relationship, and are more likely to express desire and to commit infidelity. Accordingly when applied in the parent-child relationship, parents who have higher exchange orientation towards parenting are more likely to closely monitor children's outcomes and school readiness, and are more likely to support the process of development if they perceive high potentials from their children.

Equity, fairness, and reciprocity are properties of exchange orientation (Sabatelli, & Shehan, 1993). Fairness is characterized by equality of exchanges; reciprocity is defined by mutuality of exchanges; meanwhile, equity is the perception of commensurate rewards minus the costs of investments. The degrees of reciprocity and equity expectations are contingent to the type of relationships and role expectations; for example, role expectations among married couples, friends, or within the parent-child relationship may vary, even for the same individual. Parenting rewards may be defined differently across different domains; these may include parental satisfaction over parenting efficacy and children's outcomes (Henry & Peterson, 1995); parental control

over childrearing and children's outcomes (Braver et al., 1993); and expectations of future reciprocity and security in adulthood (Benokraitis, 2002).

In summary, social exchange theory suggests that parents' investment behavior may be motivated by the rewards they may receive as a result of their children's development as manifested by their achievements. Therefore, to receive rewards, parents may endeavor to support children's development to increase children's ability to reward them in return. Parents determine and guide their parenting behaviors (investments) through their expectations of their children's future achievements (e.g. academic achievement) and their beliefs about their children's capability to reward them for their investments (e.g., their assessment of children's school readiness). Lastly, parents' exchange orientation towards parenting may determine the extent to which expectations and beliefs influence parents' behaviors. That is, parents with high exchange orientation will be more likely to monitor children's progress and depending on their outcomes may place higher investments towards children's development. Conversely, parents with lower exchange orientation may or may not closely monitoring their children's progress, and thus may or may not place high investments to support it.

CHAPTER IV

RESEARCH QUESTIONS, HYPOTHESES, AND ANALYSES

Consistent with social exchange theory and the literature reviewed above, the study aims to address the following research questions and evaluate the corresponding hypotheses:

Research Question 1. To what extent do parents' academic expectations for children and beliefs about their child's preparedness to enter Kindergarten predict their investments in early education? Investments will be measured by: a) preference for care that prepares child for kindergarten; b) the type of setting they select for their preschool-aged child; c) the quality of their primary child care arrangement; d) parent involvement in child care; and, e) the quality of the home learning environment.

Hypothesis 1. It is hypothesized that parents' expectations about children's academic achievements and beliefs about children's preparedness to enter kindergarten will be predictive of their investments in early education. More specifically, parents who expect their child to attain more years of education and who believe their child already has the skills necessary to enter school are expected to be more likely to:

a) report a preference for child care that prepares their child for kindergarten;

b) use center-based care rather than home-based arrangements for their preschooler;

c) select care arrangements that provide more learning-focused materials and activities;

d) be more involved in their child's early care and education setting; and,

e) provide more learning-focused materials and activities at home.

Analysis: Preliminary analyses will include examining the correlations between all independent, dependent and covariates variables. All hypotheses related to the first set of research questions will then be tested using hierarchical linear regression. A separate regression will be conducted for each of the five indicators of parent investments in early education, using parents' educational expectations and assessment of their child's school readiness as the key independent variables. Logistic regression will be used in the case of the dichotomous dependent variables. Maternal highest level of education, income adjusted by family size, and depression will be used as covariates. An additional covariate, availability of good child care will be used in predicting choice of quality of care.

Research Question 2. Does exchange orientation towards parenting moderate the relationship between parents' expectations and beliefs and their investments in early education?

Hypothesis 2.a. It is hypothesized that parents' expectations about children's academic achievements and beliefs about children's school readiness will be more

strongly associated (in a positive direction) with the five indicators of investments in early education among parents with high versus low exchange orientation.

Hypothesis 2.b. It is further hypothesized that parents' expectations about children's academic achievements will interact with parents' beliefs about children's school readiness and their effects on all five indicators of parental investments will be moderated by parents' exchange orientation in the following ways:

a. Parents who scored high on exchange orientation and also scored high on both parents' expectations about children's academic achievements, and beliefs about children's school readiness, are expected to score higher on all indicators of parental investments.
b. Parents who scored high on exchange orientation towards parenting and low on either or both of parents' expectation about children's academic achievements and beliefs about school readiness will score lower on the different indicators of parental investments. This is because low expectation and belief in the return of investment may motivate individuals to lower the initial investment to minimize cost.

Analysis: A test of moderation will be used to assess these relationships (by interacting each of the IVs with the measure of exchange orientation). Maternal highest level of education, income, and depression will be used as covariates. An additional covariate, availability of good child care will be used in predicting choice of quality of care.

A variable representing the interaction of parents' beliefs and parents' expectations will be created and entered as an independent variable in another set of hierarchical linear regression analysis testing the second hypothesis with parents' exchange orientation as moderator, and the five indicators of parental investments as dependent variables.

Research Question 3. Do the relationships examined in Research Question 1 vary according to ethnicity (i.e., Non-Hispanic Whites, Non-Hispanic Blacks, Hispanics, Asians, Multiracial, and Others)?

Hypothesis 3. It is hypothesized that the effects of parents' educational expectations for children and their beliefs about their child's preparedness to enter kindergarten on the five indicators of parental investments may vary according to ethnicity presumably due to different value placed by parents from different cultural orientations on learning and development, and other variables not measured in this research.

Analysis: This will be tested by conducting the same OLS analyses described for Research Question1 with the samples split according to children's ethnicity.

CHAPTER V

METHODOLOGY

Data Source

The data for this research study exploring the relations of parents' expectations and beliefs to their investments in early education was drawn from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) dataset. The ECLS-B sample is a nationally representative, culturally, and socioeconomically diverse cohort of children born in the United States in 2001. The study includes over samples of several groups who have been underrepresented in prior developmental studies, including American Indians/Native Alaskans, Pacific Islanders, Chinese Americans, and other Asian children, as well as twins and children with low and very low birth weight. The dataset includes information about these children's experiences from birth to kindergarten collected at four different time-points (i.e., 9 months, 2 years, pre-school, and kindergarten) focusing on their development in different domains across diverse settings including the home, early learning and education setting, pre-school, and neighborhood environments. Information about the primary care givers, several aspects of parenting and the home learning environment, and lastly children's child care arrangements and the early education providers were collected through computer-assisted and self-administered parent interviews and a telephone interview with early care and education providers.

Parents and children's participation in the different waves of data collection were as follows: 10,650 parents of children born in 2001 participated in the first wave of data collection when children were 9-months old, with 10,200 direct child assessments conducted. These numbers excluded children born in 2001 that died between the ages of 9-months and 2 years and those that moved abroad permanently. Nine thousand eight hundred thirty five (9,800) parents and 8,900 children participated in second wave of data collection conducted between January to December of 2003. Meanwhile, about 8,750 children participated in the pre-school wave of data collection and finally in 2006-2007 for the fourth and final wave when the children were in kindergarten level (National Center for Education Statistics, 2007). The over-all parent response rate for the pre-school interview is 63%, meanwhile the weighted response rate for the ECEP interview is 55.1%. In the sample there are 2,150 cases that have completed ECEP interview.

Analysis Sample

The study focuses on the pre-school wave of data collection conducted from late August of 2005 to mid-July of 2006 when children were turning four years old. The pre-school target population includes all subjects who were eligible for the 9 months and 2 years interviews (n= 9,800) except those who died (n=12) or moved overseas permanently (n=85) between the 2 year and pre-school waves of data collection (National Center for Education Statistics, 2007).Out of the valid preschool cases, only families that met the following requirements were included in the final sample for the current study: family income is within 200% and below the US poverty threshold of 2005 as adjusted by family size; use some form of non-parental care for at least one hour per week; and

cases that have early care and provider telephone interviews that resulted to a total sample of 2,150.

Descriptive information for the analysis sample is presented in Table 1. The restricted sample includes only those who come from the lowest income categories given previous findings that these are the children whose developmental outcomes are most affected by changes in the home and child care environments. The sample's median annual family income is $ 22,500. The majority of respondents were female (95%) and the children's biological mothers. The sample distribution by ethnicity is reported in Table 1; a majority being Non-Hispanic White and a significant proportion of Asian and multi-race children. About 78% of parents who were included in the sample used center-based care (including private centers and Head Start) as their primary arrangements, whereas the other 22% used some form of non-parental care from relative care to family day care. Approximately 28% of parent respondents had education beyond high schools, having completed at least some college.

Variables and Measures

Parental investments. In this study, parental investments refer to all material and non-material support that parents put in to promote their children's school readiness. Parental investment was assessed across two contexts (home and child care) and was measured by five indicators, which were as follows: choice of type of early learning and education setting, quality of care chosen, parental involvement in early education, children's home learning environment, and lastly, preference for care that prepares children for kindergarten.

Choice of type of early education setting. Parents were asked about the type of non-parental care arrangements that they chose for their children (e.g., Head Start, other pre-school programs, family care, other type of non-relative care, and relative care). If children are placed within several settings, the type of care where the child spent the most time will be included in the analyses. If the child spent equal amount of time in one or two settings, the care setting that had been assessed for quality shall be used. In this study, the analysis variable was coded as 1 for cases using center-based care as their primary arrangement (including Head Start, preschool, and center care) and 0 for home-based care. Magnuson et al., (2007) found support that children who attend center-based settings particularly in the pre-school years generally display better learning outcomes.

Early education learning environments. The ECLS-B Early Care and Education Provider (ECEP) questionnaire was specifically developed to make informed comparison across different child-rearing environments. In ECEP, only items that were common to center-based and home-based settings were assessed. This made ECEP more appropriate to use for this study instead of the early childhood environment rating scale – revised edition (ECERS-R) (Harms et al., 1998). It is a computer-assisted telephone interview (CATI) administered to the child care provider specified by parents in the parent interview. The interview was designed to be administered to all early education providers regardless of the type of care setting. The type of setting the interviewees work in was determined in the beginning of the interview with the computer operation path allowing some questions to be asked only to center-based or home-based providers. Specifically, only center-based providers were asked about professional development opportunities

and center activity areas. The items that were exclusive to either center or home-based care were not included in the ECLS-B ECEP subscale. The interview for the pre-school wave of data collection was conducted from September 2005 to June 2006. Center-based interviews lasted for 55 minutes, meanwhile home-based and other non-parental care interviews lasted for 45 minutes.

The questionnaire included items pertaining to information about the center, staffing, and the nature of its services; the quality of the learning environment including the center structure, learning materials, curriculums and activities, provider-child and provider-parent relationships; and also information about the providers' qualifications, trainings, and experiences. Additional eligibility criteria were employed in some portions of the ECLS-B interviews and data collection particularly for the early care and education provider (ECEP) interviews. Early education providers were not interviewed if they were minors, were also the primary caregivers of the target children, or were not the provider mentioned in the parent interview unless the child remained in the same child care center where the new provider were approached for the interview.

For the proposed study, 30items specific to the learning environment (including materials, activities, and curriculum) were included in the analysis (see attached list of items). The scale's estimated reliability was equal to .894. The30 items excerpted from the complete ECEP interview have a small but statistically significant positive correlation with overall observed quality as measured by the ECERS-R($r = .15$, $p < .01$) and the family day care rating scale (FDCRS) ($r=.29$, $p < .01$), suggesting that this subscale is a valid measure of child care quality.

Parental involvement. As part of the early care and education provider interview, child care professionals were asked about parents' involvement in their children's development within the center/care setting. This is a single item question that reflects the frequency of parents' self initiated communication with the child care provider about their child's progress within the care setting. The item was scored as always (4), often (3), sometimes (2), and never (1).A similar single item measure of parental involvement in children's progress was used by Lahaie (2008) in a study of immigrant children, wherein she found positive associations between parental involvement (as measured by frequency of parents' communication with providers)and increases in children's language proficiency.

Children's home learning environment. Parental involvement in children's learning at home were measured by 10 items composed of two types of indicators that are part of the home environment subscale of the ECLS-B parent computer assisted interview. The first type consists of two items that indicates the presence or absence of learning materials at home like a certain number of children's books (at least 11) and a family computer which the children use. The second indicator included 8 items also from the HOME measure that determine learning focused and cognitively stimulating parent-child activities at home. These contain items that show the frequency of learning focused activities such as story-telling, reading, playing in and out of doors, and singing. These items were originally scored in a range of 1-4 with 1 being not at all and 4 being every day. In order to create an index score across all of the relevant items, the activity items were re-coded into dichotomous variables, using " 0" to indicate that the activity did not

occur at all and "1" for cases where the activity had taken place at least once or twice a week. This coding scheme was used because the sample is composed of low income families and research has shown that low-income families tend to score lower in the home learning dimension of the HOME measure compared to higher income families (Totsika & Sylva, 2004). Moreover, some previous research findings indicate that lower income parents tend to have limited time to engage in enriching and stimulating activities with children while at home. The remaining set of items was composed of yes and no questions describing parent-child use of the library and library materials. A similar measure of parental involvement in children's progress was used by Lahaie (2008) who found positive association of the measure with children's academic achievements.

Preference for early education setting that prepares child for kindergarten. Parents who use some form of non-parental care were asked why they chose one type of early education setting over other arrangements and how important these considerations were to them with answers ranging from very important (1) to not very important (3). This variable is the average score of all factors that show the importance that parents attach to learning and development focused factors when selecting care for their children. The items included; a) a place that will help prepare your child for kindergarten, b) a small number of children in the same class or group, c) a care giver or teacher who speaks English, and d) a caregiver or teacher who speaks the child's native language. The alpha for all 4 items is low, $\alpha = .265$. Subsequently, the first item (i.e., a place that will help prepare your child for kindergarten) was used instead of the four item scale.

Cumulative investment. The variable cumulative investment was arrived at by first, dichotomizing the five indicators of investment (type of early education setting, quality of care, preference for early education that prepares children for kindergarten, parents' involvement in early education, and quality of children's home environment) into high and low values, which was done by splitting the scores of each indicator from the mean. Scores above the mean were coded as high (1) and those below the mean were coded as low (0). Afterwards, the scores were summed; therefore, each case may receive cumulative investment scores that range from 0-5 points.

Parents' expectations of educational achievements. Parents were asked about how far they think their children can go in school. They were given six options coded as follows 1- child will receive less than high school education, 2 - child will graduate from high school, 3 – child will attend two or more years of college, 4 to complete 4-5 years in college, 5 to earn a masters' degree or its equivalent, or 6 to finish a PhD, M.D. or other advanced degrees. For the purposes of this study, given the socioeconomic level of its target population, the last three options were collapsed into a single variable 4 to encompass completion of 4- years of college or more. Hill (2001) found this measure of parental expectations to be positively associated with children's pre-reading scores.

Parents' belief about children's school readiness. To represent parents' belief about their children's school readiness, an item which asked parents whether they have any concerns about their children entering kindergarten was used. In the event that parents perceived any such concern, they were asked to specify what those would be. The answer no was coded as 1 meaning higher perception of children's readiness for school,

meanwhile an answer of yes will get a code of 0. Even though the item was specifically asked to refer to parents' expectation when their children enter kindergarten, this item captures parents' development and school readiness assessments in the current time and is expectedly based on children's current development and progress.

Interaction between parental expectations and parental beliefs of children's school readiness. Parental expectations and their perceptions of their child's development may interact and uniquely influence investments and behaviors. To explore this relationship, both variables were dichotomized into high and low to create all possible combinations of concordance and discordance. This gave us four possible groupings of parents (i.e., high expectation-high perception of development, high expectations-low perception of development, low expectations-high perception of development, and lastly, low expectations-low perception of development).The interaction terms were coded 1 through 4 and were used as factors in a two-way ANOVA.

Parent's exchange orientation. The concept of exchange orientation generally refers to individuals' proclivity to monitor the equity and reciprocity of exchanges within interrelationships. Prins, Buunk, &Van Yperen (1993) measured individuals' exchange orientation towards marital roles and responsibility using an adaptation of Murstein's (1987) social exchange scale as shown by the following items;"I feel resentment when I feel like I spent more on a friend's present that s(he) on mine", and "My spouse's relationship with others sometimes makes him/her neglect me." Murstein, Mudlin, and Bond, Jr. (1987) proposed the original exchange orientation scale that includes items like "I wish people would show more acknowledgment when I do nice things to them", and

"A student whose education was financed by his or her parents owes his or her parents compensation in some form (respect, obedience, or money)." To capture parents' exchange orientation within this study, a five item scale coded as 4-strongly agree to 0-strongly disagree excerpted from the Parenting Stress Index reflecting parents' aggravation were used. The items included 1) being a parent is harder than I thought it would be, 2) I feel trapped by my responsibilities as a parent, 3) I find that taking care of my child is more work than pleasure, 4) I often feel tired and worn out when taking care of my family, and 5) I find myself giving up more of my life to meet my child's needs than I expect. The alpha for all 5 items equals .775.The items have been reversed coded from the original encoding so that higher scores reflect higher exchange/stress, whereas lower scores reflect lower stress/negative attitude/behaviors.

The aggravation subscale of the PSI was selected to measure exchange orientation given prior evidence that individuals in a relationship who either feel deprived or advantaged tend to manifest more distress in any type of relationship whether it is romantic, friendships, or parent-child relationships (Buunk & Prins, 1998). Accordingly, individuals who monitor the outcome of interactions more closely are generally more dissatisfied. Consequently, parents with high exchange orientation generally monitor the ratio of parenting rewards and cost and tend to express greater levels of stress and anxiety over parental investments than parents with a low exchange orientation. Maternal depression will be used as covariates in order to minimize the chance that parents' exchange orientation are being caused by other family and parenting factors other than stress over investments and parenting outcomes.

The same PSI parental aggravation subscale has been used by Halpern, Brand, and Malone (2001) to determine the relationship between parental stress and characteristics of infants with low birth weights. They found that the parenting stress is a function of children's characteristics and parents' parenting attitude. That is, the congruence between children's characteristics and parents' attitudes determine parents' stress. The relationships found in this study open up the possibility of using the subscale to measure the level of parents' monitoring of their children's development and their beliefs about supporting development. The 5 PSI items for exchange orientation has a small although significant positive correlation with maternal depression $r = .338$, $p < .01$ and a small but significant negative correlation with time 3 family income adjusted by family size, $r = -.092$, $P < .01$.

Parents' characteristics and demographic information - Parent respondents were asked about their personal information including education and level of poverty. Data were also collected in regard to parent caregivers' mental health status. These variables (i.e., family poverty, education, and maternal depression) were used as covariates in the data analyses. Family income in the ECLS-B measure was derived at by comparing income and household size with the census poverty threshold in 2005. Education was the reported highest level of education reached by children's mothers. Maternal depression was measured using a 12 item scale. A question about the availability of good quality care within the subjects' communities (scored as 0 for none, 1 for yes there are good child care nearby) was also used as additional covariate in predicting choice of quality of child care.

Data Analysis Plan

Only cases that have valid values for all analysis variables were used (i.e., listwise deletion) (N=2,150). For the preliminary analyses, I checked for differences within the independent and dependent variables based on children and mothers' characteristics (i.e., ethnicity, family income, maternal education, and maternal depression). The correlations between the independent and dependent variables were also examined.

To address the first question and hypothesis, parents' expectations of children's academic achievements and parental beliefs about children's readiness for kindergarten were used to predict the five indicators of parenting investments (choice of type early education setting, choice of quality of care, child care parental involvement, the quality of the home learning environmental, and preference for care that prepares child for kindergarten). Hierarchical linear regression were used in order to assess the unique influence of parents' beliefs, expectations, and exchange orientation on parents' investment behaviors as well as to determine how these variables are associated with parenting investments in children's early learning and environments. Covariates included family income, highest level of maternal education, maternal depression, and availability of good child care within the community. The regression equation is represented below:

Parental Investment (5 indicators) = B_o+ B_1PE + B_2PB + B_3*Cov* +*e*

Where:

PE = Parental expectations

PB = Parental beliefs of children's readiness for kindergarten

Cov = Covariates

e= Error

To test the first hypothesis for the second research question, Kenny's test of moderation was used with parents' exchange orientation towards parenting (EO) moderating the relationships between the two independent variables [parental expectations of children's academic achievements(PE) and parental beliefs of children's readiness for kindergarten (PB)] and the 5 indicators of parental investments. Covariates included family income, maternal education, maternal depression, and the availability of a good child care within the community. The regression equation is represented below:

Parental Investment (5 indicators) = B_o+ B_1PE + B_2PB + B_3PEO + B_4PBPEO + B_4PEPEO *Cov* +*e*

Where:

PE = Parental expectations

PB = Parental beliefs of children's readiness for kindergarten

PEO = Parent's exchange orientation towards parenting

Cov = Covariates

e= Error

The second hypothesis states that parents' beliefs and expectations may interact; the effect of such interaction on investment may then likewise be moderated by parents' exchange orientation. To test these hypotheses, an interaction term between parents' expectations and beliefs was created and then entered in the second step of a hierarchical linear regression model that has parents' beliefs, parents' expectations, parents' exchange orientation, and the covariates in the first step. Afterwards, instead of creating a three-

way interaction between parents' beliefs, expectations, and exchange orientation, categorical groupings were created according to whether parents have high or low parenting beliefs and expectations. High parents' beliefs referred to those parents who believed their children were ready for kindergarten, whereas, high parents' expectations of academic achievement referred to parents who expected their children to earn a college degree. This yielded four categorical groupings of parents [i.e., high beliefs/high expectations (HBHE), high beliefs/low expectations (HBLE), low beliefs/high expectations (LBHE), and low beliefs/low expectations (LBLE)]. Each categorical grouping was dummy coded then interacted with the continuous variable, parents' exchange orientation.

To address the third research question, the analyses for the first research question were repeated but this time with the sample split according to ethnicity. There was separate ordinary least squares (OLS) regression equation for each 5 indicators of parenting investments for each ethnicity namely Non-Hispanic Whites, Non-Hispanic Blacks, Hispanics, Asians, Multiracial, and others.

CHAPTER VI

RESULTS

Preliminary Analyses

Preliminary analyses were conducted to: 1) generate descriptive statistics on the primary variables of interest (i.e., parental beliefs, expectations, and exchange orientation) as well as the outcomes variables (i.e., type of care, quality of care, parental involvement, home environment, and preference for child care that promotes school readiness); 2) to investigate possible factors that influence parents' beliefs and expectations; and, 3) to examine the intercorrelations among the different indicators of investments.

Descriptive results for key predictors and outcomes. As noted in the previous section, the study sample that was taken from the ECLS-B dataset was generally composed of low income parents who used some form of non-parental care, specifically those whose annual income fell at or below 200% of the US poverty threshold for 2005, adjusted by family size. Approximately 90 percent (92.2%) of respondents in this sample also had less than a college degree education. Interestingly, despite the generally disadvantaged circumstances of the sample, Table 2 suggests some level of optimism among parents in terms of their expectations for children's academic

achievements (*M* = 3.45, *SD* =. 77 range of 1-4). A majority of parents (62.95%) expected their children to obtain at least a college degree or higher.

In addition, most of the parents (80%) believed their preschool-aged children were ready to begin kindergarten; however, it was beyond the parameters of the study to assess how parents were evaluating their children's preparedness to attend kindergarten. Overall, the sample's level of exchange orientation was moderate (*M*=2.067, *SD*=.7), with at least 43.57% of respondents reporting an exchange orientation higher than the mean. More specifically, 23.8% of respondents strongly agreed that some aspects of parenting were more stressful than rewarding, while 15.2% reported parenting to be more rewarding than stressful. Approximately 60% of parents scored near the mean of exchange orientation, suggesting that they may see the balance between aspects of parenting that are rewarding and stressful. On average, parents in the sample may perceive some aspects of parenting as potentially more rewarding than costly, meanwhile some other aspect as more costly than satisfying but in general saw a balance between the aspects of parenting that were costly and rewarding.

A majority of the sample used center-based care (78%) with the rest of parents using some form of home-based non-parental care, either relative/non-relative care or family day care. Parents generally expressed that it was important for them to find care that could prepare their children for kindergarten (*M*= 2.8, *SD*= .86) with 89% of parents saying this was a very important consideration in their early education decisions. The distribution for early education setting's learning environment quality scores was negatively skewed (Skewness = -1.1, Kurtosis = .86). This suggests that in general,

children in the sample were in care that received high scores in the ECEP measure (*M*= 22.1, *SD* = 6.295), with 58% (1,250) of children attending centers with quality scores falling within the upper quartile of the total quality score (22.5 and above). It must be reiterated that this does not automatically suggest that these early education settings are of *high quality* given the type of quality measure that was used in the study. In regard to parents' involvement that was measured as frequency of parent initiated communication with children's care givers, 58% of parents indicated having frequent and constant communication with early education providers about children's progress. Lastly, the mean score for home environment quality rating was 4.97 with a standard deviation of 1.76, with a normal distribution of scores. This means that a significant proportion of the sample received home ratings nearer the distribution mean. Given that the home rating mean was below 75% of the total home rating score (7.5), this suggests that a larger section of children in the sample were in lower quality home environments.

Determinants of parents' expectations and beliefs. There may be different factors that influence mothers' beliefs, expectations, and exchange orientations, which then indirectly affect their level and form of investments in children. In this section, I tested the associations of mothers' beliefs, expectations, and exchange orientation with family poverty, mothers' education, maternal depression, ethnicity, and children's gender. There is a significant mean difference in parents' expectations of achievements between boys and girls ($F = 4.44$, $df = 1/ 2{,}150$, $\rho < .05$, $eta^2 = .558$), with parents expressing higher educational expectations for girls ($M = 3.5$, $SD = .75$) than boys ($M = 3.4$, $SD = .79$). For example, 65% of parents of girls believed their children will obtain at least a college

degree compared to 61% of boys' parents. Additionally, 18% of parents of boys as opposed to 14% of parents of girls expected their children to only complete a high school education. There was no significant difference in parents' perceptions of the preparedness of boys and girls for kindergarten.

The data further suggest significant relationships between ethnicity and parents' beliefs [$X^2(5, N=2,150) = 5.35$]. Hispanic parents expressed the highest confidence in their children's preparedness for kindergarten (84%) followed by Blacks (81%), Asians (80%), and White parents (79%). Furthermore, there were significant mean differences in parents' expectations of children's achievements across different ethnicities ($F = 11.8$, $df = 5/ 2,150$, $\rho<.000$, $eta^2 = 1$). Multi-racial parents and Asian parents expressed the highest expectations ($M = 3.78$, $SD = .61$; $M = 3.78$, $SD = .58$) followed by Hispanic parents ($M = 3.6$, $SD = .7$), Black parents ($M = 3.5$, $SD = .78$), Native American parents ($M = 3.4$, $SD = .75$), and lastly White parents ($M = 3.3$, $SD = .79$). Asian parents expressed the highest level of exchange orientation towards parenting ($M = 2.34$, $SD = .07$), followed by Black parents ($M = 2.17$, $SD = .03$). Meanwhile, multi-racial parents ($M = 2.09$, $SD = .139$), Hispanic ($M = 2.01$, $SD = .03$), and White parents ($M = 2.00$, $SD = .02$) expressed relatively similar levels of exchange orientation with Native American parents ($M = 1.95$, $SD = .05$) expressing the lowest exchange orientation mean scores.

Parents' expectations about their children's academic achievement has a small but significant positive correlation with family income ($r=.14$, $\rho< .01$), mothers' highest level of education ($r=.25$, $\rho< .01$), and a small negative correlation with maternal depression ($r=-.09$, $\rho< .01$) suggesting that in general, parents with better education, lower levels of

poverty, and those who are less depressed expect higher achievements from their children. Parental beliefs about children's school readiness is not associated with either mothers' highest education level or family income but is negatively associated with maternal depression (r= -.08, ρ< .01). This may suggest that depressed parents are less likely to perceive their children as ready for school as non-depressed parents. Parental expectations about children's academic achievements has a significant positive correlation with their beliefs about children's school readiness (r=.10, ρ< .01) which supports the assumption that parents may be basing their expectations of children's achievements on their perception of children's capacities to meet them. Exchange orientation has a positive correlation with maternal depression and a negative correlation with family income. This finding is consistent with the theory that higher exchange orientation individuals tend to display more stressed attitudes towards parenting; there were no a priori expectations as to how family poverty might relate to exchange orientation.

Associations between different indicators of investment. An examination of the relationships between the different indicators of parental investments revealed some interesting associations. Parental involvement or the frequency that parents inquire about their children's progress in early education settings is moderately and negatively associated with the use of center-based care (r= -.28, ρ< .000) and the quality of child care arrangements (r= -.07, ρ< .01) being utilized. This seems to suggest that more involved parents use home-based care and lesser quality care. Alternatively, this may mean that parents are more comfortable communicating with home based as opposed to

center based care providers. Parents' involvement also has a negative, association (approaching significance) with parents' beliefs about children's readiness for kindergarten. It may be that parents inquire more about their children's progress when they have concerns about the quality of the care arrangements and when they perceive some problems about their children's level of preparedness to enter kindergarten. It will be interesting to find if exchange orientation moderates this relationship. Additionally, more involved parents provide higher quality home environments. Parents who indicate a higher preference for child care that prepares their children for kindergarten are more likely to choose center-based care than home-based care (r=.09, ρ<.01) and tend to choose higher quality child care (r=.07, ρ<.01). Parents who offer better quality home environments and parent-child interactions at home seem to use more center-based care arrangements but interestingly, home learning environment investments and the quality of chosen child care arrangements are not associated.

A preliminary examination of the correlations between the study predictors and outcome variables revealed that parental expectations of children's academic achievements has moderate to low positive correlations with use of center based care arrangements, parental involvement, quality of the home environment, and preference for care that prepares children for kindergarten; but interestingly, expectations have nosignificant relationship with the quality of chosen care arrangements (*see Table 3*). Parental beliefs on the other hand only have a low albeit significant positive correlation with the quality of child care arrangements. Exchange orientation is not correlated with any of the indicators of investment

It is important to note how parent characteristics apart from their beliefs and expectations influence investments. Parents' knowledge about the availability of good early education facility options within their neighborhood has a stronger correlation with the use of center-based care (r=.07, ρ< .01) than the quality of care they are actually using (r=.05, ρ<.05). At the same time, center-based care arrangements are generally associated with higher quality care (r=.56, ρ<.01). Expectedly, families' level of income predicts many of parents' investment behaviors, namely their choice of child care and the quality of their choice of care. Surprisingly, however, the relationship is not in the expected direction (r=-.05, ρ<.05 and r=-.09, ρ<.01 respectively). In other words, children in more disadvantaged families in this sample are more likely to be in center care and higher quality care than children in less disadvantaged families. Family income is positively associated with parental involvement in children's progress and the quality of the home learning environment. Parent and child ethnicity and mother's highest level of education appear to influence their level of involvement, which is consistent with findings from other literatures. Mothers' highest level of education is also positively associated with the quality of children's home environments (r=.213, ρ<. 000), whereas maternal depression has a negative association with this variable (r= -.05, ρ<.01). Family income, availability of good choice of care, mothers' highest level of education, and maternal depression will be used as covariates. Ethnicity will be used as moderator of the relationships between parents' beliefs and expectations and their parenting investments. Although children's gender may be another interesting variable that can add another layer

to my analysis, it was not included in any of the models and may be added in succeeding investigations.

Parents' Beliefs and Expectations as Predictors of Investment

Hierarchical linear regression and logistic regression analyses were conducted to address the first research question regarding the extent to which parental beliefs about children's preparedness for kindergarten and their expectations of children's academic achievements are predictive of parenting investments. Specifically, I tested if parents' beliefs about children's preparedness for kindergarten and expectations for children's academic achievements determine their preference for care that prepares their child for kindergarten; use of center-based care for preschoolers rather than home-based arrangements; selection of care arrangements that provide more learning-focused materials and activities; involvement in their child's early care and education setting; and, provision of more learning-focused materials and activities at home. These hypotheses were anchored from the social exchange proposition that individuals monitor exchanges of rewards in close relationships; hence, individual's level of rewards giving may be contingent to their expectations of future rewards and their beliefs about the capability of their co-actors to fulfill those expectations.

Five parallel regression analyses were run, one for each measure of parental investments: use of center-based care, quality of child care, parental involvement, home learning environment quality and preference for care that promotes school readiness. Parental beliefs about children's preparedness for kindergarten, expectations about children's academic achievements, and exchange orientation were entered in the

regression model as independent variables with family income, mothers' highest level of education, maternal depression, and availability of a good choice of child care in the community as covariates given previous research findings that these factors influence parents' decisions when investing in children's early education and learning environments. Table 5 summarizes the results of the regression analyses and the individual models are discussed below.

Logistic regression was used to predict the probability that children will be in center-based care according to their parents' beliefs about their preparedness for kindergarten, expectations of their academic achievements, and exchange orientation. Block chi-square was used to determine the unique effects of parents' beliefs, expectations, and exchange orientation from the covariates. Mothers'highest level of education, maternal depression, family income, and mothers' beliefs about the availability of good child care in their area were entered in the first block and parents' beliefs, expectations, and exchange orientation in the second. The influence of parents' beliefs, expectations, and exchange orientation on the probability that children will be in center-based care approaches significance ($\rho = .164$). It accounts for a .4% increase in variance in the dependent variable. Specifically, a unit increase in parents' expectations of children's academic achievement increases the likelihood of children being in center-based care by a factor of 1.154 when all other variables are controlled for ($\rho<.001$).

Hierarchical linear regression was used to address the other four indicators of parenting investments. Similar to the approach used in logistic regression, the covariates were entered in the first steps, with parents' beliefs, expectations, and exchange

orientation in the second step. Parents' beliefs, expectations, and exchange orientation were significantly associated with the quality of childcare they chose, the importance they placed in curricula that prepare their children for kindergarten, and the quality of the home learning environment they provided for children. The association between the predictors and parents' involvement in their children's progress in child care approaches significance *(see Table 5).* The associations were all in the expected direction.

Parents beliefs of children's readiness for kindergarten and expectations for achievement were equally predictive of use of higher quality care (*ß* =.045, $\rho < .05$ and *ß* =.047, $\rho < .05$, respectively). Interestingly but at the same time not surprising, only parents' expectations of academic achievement (*ß*=.104, $\rho < .000$) turned out to be a significant factor that influence parents' proclivity to search for centers that prepare children for pre-school/kindergarten. Neither beliefs nor expectations were significant predictors of parent involvement but family income and mothers' highest level of education were. That is, parents who have higher educational attainments and higher income appear to be more involved or ask more frequently about their children's progress in child care. Lastly, a unit increase in parents' expectations is equivalent to a .071 increase in home environment quality, which is significant at $\rho < .001$. Increases in units of family income, mothers' level of education, and perception of availability of good child care in the neighborhood were also associated with higher home environment quality. Perception of availability of good quality child care in the neighborhood seems to proxy for neighborhood quality.

In summary, the model did well in predicting parenting investments. Parental expectations were a significant predictor of four out of the five indicators of investments, namely use of center care, quality of care, preference for care that promotes school readiness, and quality of the home learning environment. Meanwhile parents' beliefs about children's school readiness only significantly predicted quality of early education setting. Parents' involvement, which was the only investment indicator not predicted by either parents' beliefs or expectations appears to be influenced strongly by mothers' highest level of education and family income. However, it must be noted that the changes in R-square (i.e., the amount of variance explained) when the research variables were added to the model were small, suggesting a weak association with parental investments.

There were several hypothesis tests that were conducted using the same data, which admittedly increased the likelihood of a type 1 error occurring. To correct for this, the Šidàk adjusted alpha level of .002 per hypothesis (IV x DV) test for the first research question was used (Abdi, 2007). Given the number of tests that were performed the alpha level was admittedly very conservative hence, the preference for Šidàk adjustment over Bonferroni correction. The prediction of parents' preference for child care that prepares children for kindergarten and the quality of the home environment remained significant. Parents' exchange orientation was largely predictive of parents' preference for care that prepares children for kindergarten whereas the quality of children's home environment was predicted by their expectations of children's academic achievements.

The Moderating Role of Exchange Orientation in the Association between Parental Beliefs and Expectations and Investments

Kenny's approach (2009) to testing moderation was employed to investigate if the influence of parenting beliefs and expectations about children's academic achievements on investments in early education vary according to parents' exchange orientation towards parenting. This moderation hypothesis is based on the assumption that individuals have a range of exchange orientation, which determines their monitoring of exchanges of rewards and level of satisfaction about the inflow of rewards against their expectations. If so, individuals' level of rewards giving may vary across the range of exchange orientation. Parents with higher aspirations for their children and likewise deem their children to be capable may be placing higher investments if they have higher exchange orientation because of their greater tendency to closely monitor their children's progress or lack thereof.

Once again five parallel regression analyses were conducted, one for each indicator of investment. Two interaction terms between parents' beliefs and exchange orientation and parents' expectations and exchange orientation were created. The parents' expectations and exchange orientation variables were centered before creating the interactions by subtracting their respective means from all cases. These new terms were added in the second step of the model containing parents' beliefs, expectations, exchange orientation main effects, and the covariates.

Results, as summarized in Table 6, reveal that exchange orientation significantly moderated the associations between parents' expectation of children's academic

achievements and their use of center based care, choice of quality of care, and to some extent, investment in the home. The moderation effects accounted for a modest .6%, .4%, and a .2% increase in the prediction of the probability of use of center-based care, the quality of child care that parents chose, and the quality of the home environment that parents' provided children respectively. There was no significant moderation effect found for parents' preference for child care that promotes school readiness and parents' involvement in children's child care.

The interaction between parents' expectations and exchange orientation was a significant predictor of the probability of children being in center-based care, although surprisingly, the effect was not in the predicted direction. That is, a unit increase in parents' expectations and exchange orientation translates to a decrease in the likelihood of children being in center-based care by a factor of .806, <.05. Figure 1 illustrates this association. Parents who expected their children to earn a college diploma or higher were more likely to choose center-based care when they had lower versus higher exchange orientation. On the contrary, parents who had academic achievement expectations from children that were less than a college degree were choosing center-based care more when they had a higher exchange orientation. The slope of change in the probability of parents' using center-based care appeared to be inversely proportional to their level of academic expectations. That is, the likelihood of choosing center-based care was greatest for parents who have the lowest level of academic expectations combined with higher levels of exchange orientation. At the mean of exchange orientation, parents with the highest academic achievement expectations had the highest probability of using center-based

care, whereas parents with the lowest academic achievements expectations had the lowest probability of using center-based care.

Similar associations were observed in the prediction of the quality of care that parents choose for their children. The interaction with parents' expectations and exchange orientation was significant but not the interaction between parents' beliefs and their exchange orientation. Once again, the direction of the association was not in the hypothesized direction. Results showed that a unit increase in expectations and exchange orientation translated to a .062 of a standard deviation decrease in the quality of the early education setting parents were using ($\rho<.01$). Figure 2 mirrors the prediction of use of center-based care where expectedly, at the mean of exchange orientation, parents with higher academic achievement expectations were investing more in higher quality care than parents with lower academic achievement expectations from children. However, parents who expected their children to earn a college degree or higher invested less in early education quality if this corresponded with higher exchange orientation, whereas the investment to quality of child care of those parents with academic achievement expectations of lower than a college degree increased if they had higher exchange orientation. Similar to results when predicting the likelihood of choosing center-based care, the slope of change in quality of child care used was greater among parents who have lower academic expectations for children.

Lastly, I found support for the hypotheses related to the prediction of parents' investments in children's home learning environments. As in the preceding models, the interaction between parents' expectations and their exchange orientation was significant

(ß= .041, $\rho < .05$). At the mean of exchange orientation, parents with high academic expectations (i.e., college degree or higher) were investing more in their children's home learning environment followed by parents who expected their children to get some college experience. Meanwhile, parents with lower academic expectations (i.e., less than HS diploma and HS diploma) were putting in almost the same level of investments but lower compared to the two former groups. The home environment investments of parents who expected their children to earn a college degree or higher increased as exchange orientation increased, whereas the home environment investments of parents who had academic achievement expectations of less than a college degree decreased as their exchange orientation increased *(refer to Figure 3).*

In summary, the influence of the interaction of parents' exchange orientation and expectations of children's achievements in their choice of type of early education arrangements and quality of early education arrangements was similar. High expectations and exchange orientation was associated with lower investments whereas lower expectations and higher exchange orientation was associated with higher investments. On the contrary, in parents' investments in children's home learning environment, high expectations and exchange orientation was associated with higher investments, whereas, low expectations and higher exchange orientation was associated with lower investments.

As an alternative hypothesis, I proposed that parental beliefs about children's preparedness for kindergarten (as a proxy for parents' perception of children's current development) may influence how their expectations of children's future achievements influence their investments in children's early education. That is, parents who have

higher expectations of achievement and higher beliefs in their children's level of progress may invest ata higher level in children's further learning and development. To test this hypothesis, an interaction term between parents' beliefs and expectations was created by multiplying the two variables with each other. This interaction term was then entered in the second step from the model that has all three predictors (i.e., parents' beliefs, parents' expectations, and exchange orientation) and the covariates. Table 7 summarizes the results of these analyses. Hierarchical regression yielded that the interaction between parents' beliefs and expectations was only significant in predicting parents' involvement in children's academic settings. The interaction accounted for a modest .3% increase in the variance of the dependent variable. My hypothesis was supported in the sense that parents with higher beliefs about their children's preparedness for kindergarten are generally more involved in their children's early education and their involvement seemed to increase as their academic expectations increases. However, the results extend our understanding of these associations; even though parents with low beliefs about their children's school readiness may seem to be less involved at the mean level of expectations (i.e., expecting children to have some college experience), their involvement increases with a steeper slope than parents with higher beliefs, as their academic expectations increases *(refer to Figure 4).*

It was further hypothesized that exchange orientation will moderate the relationships between the different indicators of investments and the interaction between beliefs and expectations. Because of the low variability in the distribution of parents' beliefs and expectations, four categorical variables were created to capture the grouping

of parents according to the level (high or low) of their beliefs and expectations: high beliefs/high expectations (HBHE), high beliefs/low expectations (HBLE), low beliefs/high expectations (LBHE), and, low beliefs/low expectations (LBLE). Each of these variables was then interacted with exchange orientation.

Approximately 1100 parents in the sample expressed high beliefs and expectations, 600 with high beliefs but low expectations, 250 with low beliefs and high expectations, and lastly, 200 with low beliefs and expectations. The high beliefs and high expectations grouping is composed of 29.1% Whites, 28.7% Blacks, 26.8% Hispanics, 7.2% Native Americans, 6.6% Asians, and 1.6% multi-racial *(refer to table 4).* However, the Asian sample has the largest proportion with high beliefs and expectations (69.2%) followed by multi-racial (66.7%), Hispanics (60%), Blacks (54.6%), Native Americans (44.8%), and lastly White samples (43.3%). On the other hand, the low belief and low expectations group is largely composed of Whites (50.5%), followed by Blacks (24.5%) then Hispanics, Native Americans and Asians. At the same time the multi-racial sample (0%) has the lowest proportion with low beliefs and expectations followed by Asians (1.9%), Hispanics (5.8%), Blacks (7.8%), Native Americans (8.8%), and Whites (12.6%). Approximately 79.3% (150) of parents with bachelor's degree have high beliefs and expectations and 3.6% with low beliefs and expectations. 60% of parents with some college experience also have high beliefs and expectations and 6% with low beliefs and expectations. On the other hand, 53.4% (50) and 14.8% of parents with only 8^{th} grade level of education have high beliefs and expectations and low beliefs and expectations respectively. There is a larger proportion of higher income parents among those who have

high beliefs and expectations (52.9%/ 47.1%) and low beliefs and high expectations (52.5%/47.5%) but a larger proportion of lower income parents among those who have high beliefs and low expectations (59.1%/40.9%) have low beliefs and expectations (57.4%/42.6%).

The codes were entered in the second step of a hierarchical linear regression model with parents' exchange orientation, mothers' highest level of education, maternal depression, family income, and perception of availability of good child care as controls in the first step. Lastly, each parent grouping was interacted with a continuous exchange orientation variable, the products of which were added in the third and final step of the regression model to test possible moderation effects of parents' exchange orientation. Once again, give parallel regressions were run, one for each indicator of parenting investment. Table 7 summarizes the results of these analyses.

Significant moderation effects were found in the prediction of the probability of parents' use of center-based care and the quality of early education that parents chose. Meanwhile the influence of the moderated relationship in home learning environment investments approaches significance ($\rho = .054$). No significant moderation effects were observed in the prediction of parents' preference for care that promotes school readiness and parents' involvement in children's early education settings.

Regression results supported the main hypothesis in the model with type of child care as dependent variable. It appears that parents with high beliefs and high expectations (HBHE) were generally more likely to use center-based care at the mean level of exchange orientation and this likelihood increased by a factor of .911 as exchange

orientation increased. Similar associations were observed for parents who have high beliefs but low expectations (HBLE) and parents with low beliefs and low expectations (LBLE), although these parents were initially less likely to use center-based care. The least increase in probability of use of center-based care was observed from the low beliefs/high expectations groups (LBHE).

Figure 6 illustrates the influence of exchange orientation in the quality of child care that parents' choose for their children based form their levels of beliefs and expectations. A significant moderation interaction was found but in the opposite direction than was hypothesized. The investment in child care quality of parents with high beliefs about children's school readiness and expectations of academic achievements and parents with low beliefs but high expectations chose care of relatively equal quality at the mean of exchange orientation with LBHE parents using care of slightly higher quality. The investment in quality of both groups decreased as exchange orientation increased but the drop in investments of the LBHE group was steeper (ß = -.05 vs. ß = -.28). Parents with low beliefs and low expectations were putting in the least level of investment in early education quality at the mean of exchange orientation with parents with high beliefs but high expectations respectively higher. Even though the investment of both groups increased as exchange orientation increased, the increase in investment of the LBLE group was steeper (ß = .063 vs. ß = .017). In fact, the investment in quality of this group ended up significantly higher than for the HBHE group (ß=1.908, $\rho < .01$) who was putting in one of the highest level of investment from the mean of exchange orientation.

In regard to the prediction of home learning environment investments, the investment of LBHE groups was slightly higher than the investment of the HBHE group at the mean of exchange orientation. Both of the groups' investment increased as exchange orientation increased but the slope of increase in the investment of the HBHE group was slightly higher (ß = .071 vs. ß = .027). The investment in the home learning environment of the HBLE group remained constant across exchange orientation. On the other hand, the LBLE group had the lowest level of investment at the mean of exchange orientation, this further decreased by .023 of a standard deviation for every unit increase of exchange orientation.

Exchange orientation appears to have influenced the way that parents' beliefs and expectations affect their levels of investments in children's early learning environments. Moreover, it seems like parents' beliefs about children's readiness for kindergarten does affect the interaction between parents' investments and their expectations. Specifically, it appears that in most cases, parents' expectations influence the direction of effects in investments; meanwhile, parents' beliefs affect the amount of change in investments across levels of exchange orientation.

None of the significant associations in the moderation relationship held when the alpha was adjusted to control for type I error. Given the number of tests performed, Šidàk adjustment gave a very conservative alpha level. Therefore, caution must be exercised in the interpretation of these results, because of the risk of committing type II error, or accepting an incorrect null hypothesis.

Parents' Beliefs and Expectations and Cumulative Investment

Considering how parents' beliefs, expectations, and exchange orientation differentially and inconsistently predicted the different indicators of investments, it was interesting to test how these two factors relate to cumulative investment. Cumulative investment was computed by dichotomizing the five indicators of investments into high and low. All high values were coded as 1 and low values as 0. These values were then summed to arrive at a cumulative investment score. In the first model, parents' beliefs, expectations, and exchange orientation explained .9%of the variance in cumulative investment. Mothers' highest level of education (ß=.063, ρ<.001) and parents' expectations (ß=-.063, ρ<.001) were also significant predictors. That is higher levels of mothers' education and lower levels of parents' expectations were associated with higher cumulative investment. Using the Šidàk adjusted alpha level of .002, mothers' education and parents' expectations of children's academic achievements remained as significant predictors of cumulative investment. None of the other models were significant in predicting cumulative investments.

Parents' Beliefs, Expectations, Investments, and Ethnicity

The last research question aimed to explore whether there are differences by ethnicity in how parents' beliefs, expectations, and exchange orientation influence their investments in children's early learning environments and early education. Beliefs, expectations, and exchange orientation may or may not matter to different parents' investment decisions and behaviors possibly due to social and contextual factors encompassing the family. Separate OLS and logistic regression analyses were conducted

for each indicator of investments for each ethnic groups, with beliefs and expectations as independent variables and income, mothers' education, depression, and perception of availability of good early education facility as covariates. Tables 8a-8f show the results.

Parents' beliefs about children's preparedness for kindergarten were a significant predictor of investments for the Hispanic and Asian, Black, and Multi-racial samples. Asian and Hispanic parents who believed their children to be ready to enter kindergarten without concerns tended to choose higher quality early education. The slope of effect was only slightly higher for Asian parents (ß= .323, ρ<. 001) than Hispanic parents (ß= .106, ρ<. 05). However, there is a larger variability in the quality of early education setting that Asian parents use thus larger standard error of estimates exist within in the sample. Asian parents' use of center-based care also increases by a factor of 4.396 when they believe their children to be ready for kindergarten, which is significant at ρ< .05. Meanwhile, school readiness beliefs influence the home environment investment of Black parents and the involvement of multi-racialparents in their children's early education settings. Across these twogroups, the belief that children were ready to enter kindergarten was associated with higher levels of investment.

Meanwhile, parents' expectations of children's achievements significantly predicted Native American parents' investment in children's early education and learning environments. Specifically, expectations of children's academic achievement were positively associated with their choice of center based care, selection of child care that was of higher quality and that likewise have a curriculum that promotes school readiness, and their home investments (*refer to Table 8d*). Similarly, parents' expectations of

children's academic achievement positively predicted Black parents' choice of higher quality child care that can prepare their children for kindergarten. Parents' beliefs and expectations were not associated with the investment behaviors of White parents.

CHAPTER VII

DISCUSSION

In this paper, I investigated the association between parents' beliefs about children's school readiness, expectations for their children's educational achievements, and their investments in early learning environments applying various tenets from the social exchange perspective. I also tested the relevance of parents' parenting exchange orientation in their investment in children's development. I used data from the Early Childhood Longitudinal Study – Birth (ECLS-B) Cohort to test my research hypotheses choosing a sub-sample that is composed of low-income families, where levels of investment may be more critical in the determination of children's outcomes. Several hierarchical regression models were designed to predict five indicators of investments and a model to predict cumulative investment. My findings revealed interesting associations between the variables of interest that may have implications in future investigations of parenting investments and program implementation.

The Utility of Social Exchange Theory for Understanding Parental Investment

Although parental investments in children's development have been extensively researched, investigations applying the social exchange perspective in this context are very rare. The limited use of the perspective in studies about this system of interaction

may be due to the general view of parenting as altruistic and the social exchange perspective's emphasis on interrelationship exchanges (Fuligni & Yoshikawa, 2003). Alternatively, it may be due to difficulties in assessing children's perspective of exchanges although traditionally, the social exchange framework has frequently been assessed from the view point of only one actor. The human capital theory is a similar perspective that had been applied to investigate this system of interaction. This perspective purports that individuals decide on investment in a manner where they can maximize gain over investment. The social exchange perspective extends this view with the concept of exchange orientation, laying more weight of investment decisions within individuals.

I argue that there exists a perception or expectation of reward exchanges from the parents' perspective. That is, parents may in fact expect rewards from children within their parenting role. These rewards may be material or in the form of parental satisfaction or family security. Consequently, parents' perception and expectation of future parenting rewards may concurrently influence their investments in children's early learning and development. That is, the more parents value the rewards that children provide, the more they may put in investments to assist children in fulfilling their expectations regardless of their poverty or lack of resources. The value that parents may be placing on specific parenting rewards may be measured as parenting exchange orientation.

Furthermore, results from this investigation may lend additional insight into the investment behaviors of low-income parents, which can easily be assumed to be lower than higher income parents because of their limited material resources. However, even

the investment behavior of low income parents is variable and the factors that determine this variability are important. I argue that parents' beliefs, expectations, and exchange orientation are some of the factors that affect their investment.

The Association between Parents' Beliefs, Expectations, and Investments

Low-income families have limited resources; hence they need to maximize the use of whatever resource they may have at hand. In order to do that, they need to wisely weigh the value and profitability of every investment they are going to make. The social exchange perspective proposes that individuals use all available information to make these types of decisions and given its emphasis on the importance of exchanges in social relationships, it was hypothesized that parents' investments in children's development will be influenced by their expectations of children's achievements and beliefs about children's readiness for kindergarten (parents' assessments of children's capability to provide rewards). For instance, a parent who feels that his/her child is intelligent may feel it wiser to shed a few valuable extra dollars to send the child to a better school as oppose to when he/she feels that the child will not go far in school.

There was some support for this hypothesis. Parents' expectation of children's academic achievements was a significant predictor of four of the five indicators of investments (i.e., use of center care, quality of child care, preference for child care that promotes school readiness, and quality of the home learning environment) and cumulative investments. That is, higher parental expectations for children's education were associated with more use of center-based care, use of higher quality child care, more preference for care that prepares children for kindergarten, higher quality of home

environment, and higher score in cumulative investments. Parents' beliefs about children's school readiness only significantly and positively predicted quality of children's child care. Parents' involvement was the only measure of investment not predicted by either parents' beliefs or expectations. These results somehow lend support to the propositions that positive expectation of rewards or returns of investments and beliefs or trust about interaction partners' capability to return given out rewards (trust for equity) into personal rewards (investment outcomes) will increase levels of investments (Sabatelli & Shehan, 1993). These findings are also consistent with some tenets of the human capital theory that states that individuals, when making decisions about investments, attempt to maximize gains by anticipating results through available information (potential, prospects, and weaknesses).

It must be noted that the regression model only explained a small percentage of variances in the dependent variables (investment indicators). This may be due to different factors such as how the variables were originally measured, given that this study made use of secondary data and the existence of other important predictors of investments not measured and included in the model. This can include fathers' characteristics, other dimensions of parenting beliefs, and culture just to mention a few. This weak association may also be attributed to the fact that parents' beliefs and expectations were not significant in predicting the investment behaviors of White parents, who compose the larger proportion of the sample. Succeeding investigations may need to include samples with more collectivistic orientation in order to examine the model better (e.g. predominantly Asians, Hispanics, and Blacks).

Nevertheless, the findings that the independent variables were indeed significant predictors of investment need further exploration. It was interesting that parents' belief about children's preparedness for kindergarten was only associated with quality of choice of child care, which was similar to Gamble and colleague's (2009) findings that parents' do consider children's developmental status when making decisions about child care.It may be that child care of better quality is also less accessible or more expensive hence, parents who tend to believe their children have the potential and capacity to learn, use them. This may be even more relevant for parents with fewer resources and who need to wisely allocate the family's resources. However, the fact that the study did not find further significant associations between parents' beliefs about children's preparedness for school and other parenting investments must be interpreted with caution given that beliefs were measured using only a single item question. Furthermore, the manner through which the question was asked, as a presence or absence of concern about children entering kindergarten, may have left a wide margin of interpretation about school readiness concerns among respondents that may or may not have anything to do with their perception of children's developmental levels and potentials. Succeeding studies must specify school readiness beliefs that are based from parents' assessment of children's developmental progress and expectations of potentials.

It was surprising that parent involvement, one other measure of investment not requiring material input, turned out to not be associated with parents' beliefs and expectations, especially given the socioeconomic distribution of the sample. It was expected that parents in the sample would manifest higher involvement in children's

learning in the early education setting to compensate for their limitations to provide other material investments. However, similar to how school readiness beliefs were measured, it must also be noted that parents' involvement was measured in the study as a single question pertaining to the frequency of parent initiated communications with teachers about children's progress in early education settings. More probably, there are dimensions of parenting involvement that were not captured in the study. Moreover, Ryan, Casas, Kelly-Vance, and Ryalls (2010) found in a study about parent involvement that Latino parents tend to place more value on children's academic and social success compared to White parents, but remain less involved in children's academic careers. This may show similar disconnect between parents' involvement and academic expectations. Furthermore, given the research sample's characteristics, there may be more barriers for them to be involved in children's early education despite their expectations and beliefs about children's readiness for kindergarten. Some of these barriers may be work, time, language, minority status, parents' education, employment, school climate, and parents' problems about dealing with authority figures (Van Velsor & Orozco, 2007).

Parents' Exchange Orientation, Beliefs, Expectations, and Investments

One of the goals of the study is to look into the possible moderating effects of parents' exchange orientation in the influence of parents' beliefs and expectations in their investments on children. Exchange orientation is a social exchange concept that refers to individuals' monitoring or score keeping of equitable and fair exchanges in relationships manifested as expectations of outcomes and rewards (Murstein, 1987). In the parent-child relationship, this may be equated to parents' monitoring and involvement in children's

educational careers in anticipation of their future achievements and contributions in the family. Drawing on the marriage literature that suggest that high exchange orientation towards a particular reward or behavior tend to increase individuals' seeking behavior towards the achievement of rewards (Prins et al., (1993), it was hypothesized that high expectations of children's achievements and high beliefs about children's readiness for kindergarten will result in higher investments among parents who have higher exchange orientation compared to parents with lower exchange orientation. Parents' desire to be rewarded, especially if they closely monitor parenting rewards against loses may motivate them to invest more.

These hypotheses were only partially supported. The study showed that parents who expected their children to graduate from college invest more in their children's home learning environments. Furthermore, parents' level of investment is higher among those who have higher exchange orientation. Parents' expectations of their child obtaining lower than a college degree were shown to be associated with lower levels of investments. Investments were lower still among parents with lower exchange orientation. These associations are consistent with the proposition that higher exchange orientation individuals are likely to place higher investments in an interrelationship when they feel they are more likely to be satisfactorily compensated (Sabatelli, &Shehan, 1993). I refrained from making a definitive hypothesis for the behaviors of individuals/parents with low exchange orientation given how previous studies suggest that having low exchange orientation does not directly influence relationship satisfaction and reward giving behaviors. However, these results suggest that having lower exchange

orientation may result to lower investments when concurrent with lower expectations. Moreover, having low expectations and higher exchange orientation was likewise associated with lower home investments. This may be explained by the concept of equity. In the absence of expectation of equitable exchanges individuals may seek satisfaction or rewards from alternative avenues. As was previously suggested, low income families distribute resources among various needs according to priority, parents may find it more prudent to invest in food and housing than in early education, if they have low hopes of their children earning a degree, which can improve their stature in life.

The opposite was found to be true about parents' use of center-based care and higher quality child care. Parents who have higher academic achievement expectations for children generally tend to choose center-based care and higher quality child care more at the mean of exchange orientation. These likelihoods were smaller for parents who have higher exchange orientation. On the other hand, parents with lower academic achievement aspirations for children tend to invest lower in center-based and quality child care unless they have higher exchange orientation. On the one hand, this may suggest a difference in how exchange orientation influence exchange interactions in marital and parent-children relationships because of the accepted delay in the gratification of parents' rewards in the relationship. Therefore, they can have more hope of future rewards as oppose to a marital relationship where each action is measured.

However, in looking at the data, parents' expectations were shown to bepositively correlated with family income, suggesting that lower income parents likewise have lower expectations of children's academic achievements suggesting that parents may also be

aligning their expectations of their children's achievements with how much they can support their education. Given this information, there have been studies showing lower income children having greater access to center-based care such as Head Start than children of middle class families. Taking this in perspective, it is not surprising that higher exchange orientation parents despite having low academic expectations are more likely to take advantage of free and subsidized center-based care for their children. Access to these services may decrease as we climb up the socio-economic ladder. Therefore parents with higher expectations and exchange orientation may be putting in alternative forms of investment, such as involvement in children's learning at home.

Ryan et al., (2010) found that parents' involvement is usually higher outside of school than inside. These findings, although not hypothesized, were nevertheless interesting and should be explored in future investigations. This may further suggest that having high exchange orientation motivates parents with low academic expectations for children to invest more to push children higher up the academic ladder. Low income parents are cognizant of their current capacity to send their children to school, which may account for the low academic expectations they have for their children. However, because of their higher exchange orientation or desire for later compensation, they may place extra support on children in order to increase the chances of achieving their desired outcomes, which in this case is their children's higher achievement.On the contrary, having high exchange orientation and expectations that children will finish school regardless of investments may be allowing parents to ease off and place resources somewhere else. One important aspect to emphasize is the difference in the association of

parents' expectations to investment within the home and the child care setting. It may be worthwhile to further investigate whether this is an evidence for the home-child care supplementation or even complementation.

How parents measure equity and re-establish equity in the parent-child relationships is currently unclear. In the marital relationship, the disadvantaged partner may try to re-establish equity by disengaging from the relationship or getting satisfaction from extra-marital relationships. On the other hand, what do parents' do when parenting becomes more stressful than rewarding or when parenting investments appear ineffective in achieving the desired outcomes for children. Can this possibly result in parents disengaging by becoming less warm and sensitive or becoming more punitive and authoritative? It would be interesting to investigate using a longitudinal design how parents respond to dissatisfaction with children's outcomes in relation to their previous investments and exchange orientation.

No significant moderation was found between parents' beliefs about children's readiness for kindergarten and their parenting investments. This may suggest several things. One interpretation is that exchange orientation does not moderate the influence of these types of beliefs on parenting investments. Another interpretation, which is more likely, is that we needed a better measure of parents' beliefs about children's potentials and capabilities pertaining directly to their parenting expectations. Another aspect of the problem, which this study failed to explore because of the limitation of the data, is whether parents' beliefs about children's academic and future potential mediates the influence of parenting expectations on investments. For example, parents may express

high academic expectations for children and yet may place relatively lesser investment, specifically their level of involvement, simply because they trust their children to be independently capable or able with lesser supervision and monitoring.

The hypothesis that parents' expectations and beliefs interact to differentially influence parents' investments was only supported in the model that has parents' involvement in children's child care as the dependent variable. It was found that parents who believed their children were ready for pre-school tend to be more involved in children's child care than parents who believed their children were not ready, especially if they had lower academic achievements expectations for children. Higher academic expectations from children were also observed to be associated with higher parent involvement for both types of parents who thought their children were ready for kinder and those who do not. However, the increase in involvement of parents who thought their children were not ready for kinder was steeper as their expectations of children's academic achievement increases, compared to parents who thought their children were not ready for kinder. This suggests that most parents tend to be involved in children's child care progress when they have higher academic achievement expectations for their children. However, parents who believe their children need additional attention and support were inquiring more frequently about children's progress. Perhaps parents are seeing involvement as a strategy to help children in child care when they are having difficulty coping. Therefore, involvement decreases the moment parents believe their children have already adapted in child care. It will be good to test this in succeeding investigations by exploring differences in involvement across the school year.

The hypothesized effects of parents' exchange orientation towards parenting on the investments of parents with varying combinations of levels of beliefs and expectations was supported in the models predicting type of early education setting, quality of care, and home learning environment quality. The models of early education setting quality and home learning environments suggest that parents' expectations determine whether parents' exchange orientation will have a positive or negative influence on parents' investments; whereas, parenting beliefs influence how much investments may increase or decrease across parents' exchange orientation. In the model that has center-based care as the dependent variable, three of the four groups increased in likelihood of choosing center-based child care with increases in exchange orientation; only the parent group who had low beliefs but high expectations of children's academic achievement was different because the probability of them choosing center-based care appear to be the same across parents' exchange orientation. These results provide some support to the proposition that parents' expectations of children's future achievements influence how they will invest in their children. Parents' with greater expectations are more likely to provide extra support in order to make sure that their children will live up to their expectations. Moreover, it was also supported that apart from parents' expectations of children's future achievements, their concurrent beliefs about children's progress (in other words, their chances of being able to live up to expectations) likewise influence how much parents invest. The evidence that parents' exchange orientation towards parenting moderates some of these associations provides support for the notion that parents consider personal future outcomes when investing in children's development.

Ethnic Group Differences in the Associations between Beliefs, Expectations, Exchange Orientation, and Investments

In regard to ethnic differences in how parents' beliefs and expectations influence parenting investments, parents' belief was most influential to the investment behavior of Asian and Hispanic parents. Parents' expectations were shown to be associated with the investment behaviors of Native American and Black parents. Meanwhile, neither parents' belief nor expectations was a significant predictor of White parents' investments in children's early learning environments.

Although these findings were interesting, there was no clear link between them and the propositions of the theory. It was expected that beliefs and expectations will matter the most in the investments of Asians and Hispanic parents because of their more collectivist orientation and not so much for white parents but there was no definitive answers found in this sample. That is, there was no consistent pattern indicating that lower income Asian and Hispanic parents are investing more in their children if they have higher expectations because of their collectivistic beliefs. However, as expected, beliefs and expectations did not matter in the investment behaviors of White parents. This does not mean there is no association between parents' ethnicity, beliefs, and expectations given findings from extant literature showing cultural beliefs and backgrounds as primary determinants of individuals' decisions and behaviors specifically in parenting (Fuglini & Yoshikawa, 2003). Moreover, the exchange orientation of Asian and Hispanic parents is also variable despite them being known for their stronger collectivist orientation; hence, succeeding investigations must look into the association of parents' ethnicity, exchange

orientation, beliefs, expectations, and investments. Lastly, ethnicity may not be an ideal proxy for collectivist orientation given possible within group variability, it may be better to have a measure for this variable in order to yield more meaningful findings.

Study Results in Context

Bronfenbrenner's (1993) bio-ecological perspective was referenced in the beginning of the text but since then, the social exchange perspective had been primarily used to frame the study. However, the bio-ecological perspective remains relevant in the interpretation and application of the investigation's results. The study looks narrowly in the influences of mothers' beliefs and expectations about their children's achievements in their families' investments in children. However, this was done with an acknowledgement that these beliefs and expectations are by-products of these mothers' cultural contexts, demographic characteristics, specific family circumstances, and even their children's characteristics and capacities. With this in view, the applications of these findings seem more relevant to individual cases instead of generalized groups. With the bio-ecological framework in mind, succeeding investigations may explore the effects of possible differences in mothers' and fathers' exchange orientations in their investments in children or determine different factors that shape parenting beliefs, expectations, and exchange orientation.

Limitations of the Study

Despite interesting and favorable results of the study in regard to the research hypotheses, it is important to emphasize several limitations. The use of the ECLS-B dataset was beneficial for the purposes of the study because the dataset contains useful

information about children's development and experiences in various developmental contexts and levels of interactions. However, one caveat in the interpretation and use of findings from this study is that questions and methods were not specifically developed with the social exchange perspective in mind. The researcher had to make do with existing survey questions and responses that approximate social exchange concepts. Therefore, the variables that were used in the analyses were approximations or proxies of social exchange concepts. Hence, the most we can gather from these findings is to find significant associations between the concepts of interest. For example, the exchange orientation measure was adapted from the Parent Stress Index Scale-short form instead of Murstein's (1987) exchange orientation scale.

Parents' belief of children's school readiness was measured using a single item question of whether or not parents' have concerns about their children starting pre-school. A measure determining parents' assessments of children's skills and knowledge in relation to beginning formal education would have yielded richer results. Although the measure of parents' expectation is as intended, the manner of how the question was asked during the interview may be different as how it would have been with social exchange as the primary framework. This could have changed the manner through which parents have answered the question. The measure of parent involvement included in the questionnaire only captured parent initiated communication, excluding other forms of involvement such as participation in center activities, volunteering, etc.

I tested a good number of hypotheses using the same sample, which increases the likelihood of committing type I error. When the alpha level was adjusted to correct for

this, a good proportion of the significant findings became not significant therefore inviting the argument that those were simply statistical chances and not real associations, this must be considered when looking at these findings. On the other hand, it is also risky to dismiss these interesting associations given their possible implications to programs.

Finally, parents' collectivist and individualistic perspectives were not assessed, which could have added an additional layer in the investigation of whether parents expect children to contribute to the family or support them in their old age. Instead, ethnicity was used as abroad proxy for these constructs, likely missing a large amount of within-group variability in parents' beliefs and expectations.

Implications for Research, Practice and Policy

The current study provided us with alternative ways of viewing parent-child relationships and parents' decision making about supporting children's development. In order to fully realize parents' decision-making process, there is a need to understand parents' motivations in relation to investments in children and the value they attach to children's development. Furthermore, it may help to know what they think about particular strategies that promote child development and whether those tie in with their beliefs.

Contextual and environmental factors (e.g., resources) may shape the landscape that parents need to navigate in the process of supporting children's development, but as in most cases, internal motivations and perseverance may always make a difference in the end. That is, if program strategies are fitted with parents' beliefs and expectations, they may become more enthusiastic and involved in the intervention. Accordingly, in

soliciting parents' participation and involvement in initiatives to enhance children's developmental trajectories, it is important to determine what levers to pull and to anticipate how different types of parents may respond to such prodding. In other words, not all parents will respond similarly to advocacies in regard to the importance of supporting early childhood development, unless those messages connect with their personal motivations. Parents may be more receptive to services and information that are relevant to their beliefs and expectations for their children. Which is why, it is critical during program initiations, that implementers and parents' understanding of programs are aligned, which can be achieved through needs assessments, awareness raising, and contracting prior to program participation. Moreover, in order for parents to make informed decisions about investing in children concurrent to their beliefs and expectations, they must possess some knowledge about children's development and to realize the importance of supporting this. Child development modules have often been integrated in parent effectiveness seminars, it just needs to be emphasized and communicated to parents in more effective ways (i.e., concordant with sets of beliefs and values).It may also be important that parents be provided with regular information and updates about their children's level of development within care settings, which is usually assessed upon entry to a care institution. This information may be used by parents to plan and evaluate their investments in children.

The associations between parents' expectations of children's achievements and beliefs about children's readiness in their investments may have important implications in future research and interventions about parenting investments in children and children's

development given their influence in parents' decision making in planning and determining children's educational careers. Decisions about educating children may not be arbitrary or completely altruistic, instead may in fact be based on previous assessments of children's potentials or expectations of future functionality. In such instances, parents' knowledge of child development and developmental milestones becomes even more crucial. Furthermore, factors that may influence parents' beliefs and expectations for children's future achievements such as culture and values may be playing more of a role in children's development than was previously believed. That is, the responsibility and value that parents attach to their children's future contributions to the family may inadvertently determine the way that they support children's progress. Having these in perspective, low income parents' awareness of low-income children's school readiness status in relation to higher income children may hold a different significance.

Knowledge that children are developing below par other children may or may not serve to motivate parents to increase investment in children. Depending on the type of their motivations, some parents may choose to invest more on children the more that they believe them to be lagging behind or contrarily, some may choose to let go of this effort and surrender to hopelessness or some other alternative way to achieve fulfillment. On the other hand, keeping parents' exchange orientation towards parenting in mind, parenting stress may be interpreted as parents placing very high value in children's development in the context of family hardship. Parents experience stress towards parenting because of their strong desire to provide for their children but lacking the capability and opportunity to do so. These parents will be the ideal recipients of direct

delivery of early childhood and education service, which may include material augmentation and self-employment assistance.

A possible next step would be to assess changes in parents' investment behaviors over time, if they are dissatisfied with children's outcomes after providing good investments. Would higher exchange orientation parents be more likely to become distant and disengage compared to lower exchange orientation parents? In exchange relationships, disadvantaged partners or individuals who feel they are giving more than they are getting back, tend to withdraw support or look for alternative sources of satisfaction; would this same relationship pattern occur in parent-children exchanges (Sabatelli & Shehan, 1993)? Another interesting avenue to explore would be defining the meaning of parenting stress viewed within the social exchange perspective and considering parents' exchange orientation. Does high parenting stress suggest negative or positive attitudes towards parenting?

Lastly, mothers' beliefs and expectations were the only factors considered in this study. However, fathers' influences in over-all investments in children, although often browsed over in these types of inquiries may actually pose a difference, especially if their beliefs and expectations are dissimilar from those of mothers. Fuglini and Yoshikawa (2003) suggested that mothers' resources tend to be used more often in investments in children; can this also suggest greater influence for mothers in decision making about children's development?

Conclusion

Overall, the findings in the study provided tentative support to the relevance of the social exchange framework in understanding parent-child interrelationships. The study had a sufficiently large sample size to have statistical power to detect effects. Findings show some influence of parents' beliefs about children's readiness for kindergarten on parents' choice of quality of child care learning environment and of parents' expectations of children's academic achievements in most indicators of investments except for involvement. These seem to suggest that the more parents expect from their children and the more that they believe their children have the skills and potential to live up to those expectations, the more motivation they may have to invest valuable resources in support of children's development. The significant influence of parents' exchange orientation in investment behaviors was an interesting finding and should further be explored in succeeding investigations. It suggests that parents' decision making in regard their children's development involves more than a consideration of material resources and other external/contextual factors. In addition, parents' behaviors may be influenced by their personal values, beliefs, and aspirations for the future. In spite of poverty or limited resources parents may be finding ways to support children if they believe doing so can make a difference not only in children's lives but also for the future of the family.

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APPENDIX A. TABLES

Table 1. *Descriptive Data for Study Sample*

Variables	N	%	M	SD
Demographic Characteristics				
Child's Gender	2,150	------		
- Male	1,100	51.4		
- Female	1,000	48.6		
-				
Child's Ethnicity	750	34.9		
- Non-Hispanic White	600	27.8		
- Non-Hispanic Black	500	23.2		
- Hispanic	200	8.4		
- Native American	100	4.9		
- Asian	50	1.2		
- Multi-racial				
Poverty (Income/Family Size)		51.4		
≤100 poverty line		48.6		
≥100 - ≤200 poverty line				
Primary Care Arrangement	1,700	78.0		
- Center based	500	22.0		
- Home based				
Maternal Education	100	4.1	1.54	.5187
- 8th Grade	350	15.8	(Scale of 1-4)	
- 9th-12th Grade	900	41.6		
- HS Diploma or equivalent	50	3.1		
- Vocational Training	650	27.6		
- Some College	150	7.8		
- Bachelor's Degree or higher				
Parental Depression				

Note: N = 2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 2. *Descriptive Data for Predictors and Outcome Variables*

Variables	N	%	M	SD	R
Predictor Variables					
Parental academic expectations for child *(1=less than high school diploma; 4=to receive bachelor's degree or higher)*			3.	.77	1-4
Parent believes child is ready to enter kindergarten					
- Yes	1,700	80.3			
- No, parent has some concerns	450	19.7			
Parents' exchange orientation towards parenting *(1=strongly disagree, 4 =strongly agree)*			2.067	.71	1-4
High Exchange*					
Low Exchange*	950	43.57			
**Split from the sample mean level of exchange orientation. The continuous variable was used for all analyses*	1200	56.43			
Outcome Variables					
Primary arrangement					
- Home-based	500	22.01			
- Center-based	1700	77.98			
Quality of early education			22.1	6.295	0-30
Parental Involvement *(1=never; 4=always)*			2.75	1.06	1-4
Preference for care that prepares child for school *(1= not important; 3= very important)*			2.88	.36	1-3
Home learning environment			4.97	1.76	0-10
Cumulative investment *(having high or low scores for all indicators of involvement; 0= low)*			2.94	.97	0-5

Note: N = 2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 3. *Correlation Matrix*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Child's Sex (1=female)	1												
2.Mothers' Highest Education	-.01	1											
3.Maternal Depression	.01	-.04	1										
4. Family Income	.02	.27**	-.16**	1									
5. Availability of Good Choice of Child Care	.04*	-.02	-.05*	-.01	1								
6. Parental Beliefs	.08**	.03	-.08**	0	.06**	1							
7. Parental Expectations	.04*	.25**	-.09**	.14**	-.02	.10**	1						
8. Parents' Exchange Orientation	.01	-.04	.34**	-.09**	-.03	-.05*	-.05*	1					
9. Primary Care Arrangement	.01	.02	-.01	-.05*	.07**	.01	.04*	.02	1				
10. Quality of Early Education	.03	-.03	.03	-.09**	.05*	.05*	.03	.00	.56**	1			
11. Parental Involvement	0	.09**	-.02	.11**	-.05*	-.04	.05*	-.04	-.28**	-.08**	1		
12. Preference for Child Readiness	.02	-.01	-.01	-.02	.04	.00	.09**	-.02	.09**	.07**	-.02	1	
13. Home Learning Env	-.02	.21**	-.05*	.16**	.04	.02	.13**	.01	.05*	-.01	.05*	0.1	1

Note. N=2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$ (2-tailed)
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 4. *Descriptive of Categorical Groupings of Levels of Expectations and Beliefs*

		Categorical Groupings (%)			
		HBHE	HBLE	LBHE	LBLE
Ethnicity	non-Hispanic White	29.1 (43.3)			
	non-Hispanic Black	28.7 (54.6)			
	Hispanic	26.8 (60)			
	Native Americans	7.2 (44.8)			
	Asian	6.6 (69.2)			
	Multi-racial	1.6 (66.7)			
Education	College Degree	79.3			3.6
	Some College Experience	60			6
	8th Grade and below	53.4			14.8
Income	High	52.9	47.1	52.5	47.2
	Low	40.5	59.1	42.6	57.4

Note: N = 2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.Percentages in parentheses are based from Ethnicity.

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 5. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Hierarchical Linear Regression*

Models	Type of Care					Quality of Care				
	b	se	Odds Ratio	ΔR^2	Δ2LL	b	se	ß	ΔR^2	ΔF
Step 1				.012	6.571**				.011	6.263***
Mothers highest level of education	.055	.04	1.057			-.014	.104	-.003		
Maternal depression	-.069	.101	.934			.147	.263	.012		
Family Income	-.241*	.099	.786			-1.059***	.255	-.093		
Perception of availability of good child care	.387***	.117	1.473			.665*	.318	.045		
Step 2				.004	1.412^{+}				.004	3.273*
Constant	1.249	.284	3.487			22.006	.738			
Parents' beliefs	-.009	.132	.991			.707*	.342	.045		
Parents' expectations	.143*	.069	1.154			.383*	.182	.047		
Parents' exchange orientation	.072	.079	1.075			-.082	.203	-.009		

Models	Preference for Care that Prepares for Kinder					Parents' Involvement				
	b	se	ß	ΔR^2	ΔF	b	se	ß	ΔR^2	ΔF
Step 1				.002	1.028				.018	10.046***
Mothers highest level of education	.000	.006	.000			.058**	.017	.074		
Maternal depression	-.011	.015	-.016			-.002	.044	-.001		
Family Income	-.014	.015	-.021			.161***	.043	.085		
Perception of availability of good child care	.030	.018	.035			-.112*	.053	-.045		
Step 2				.01	7.324***				.003	2.095^{+}
Constant	2.912	.043				2.536	.124			
Parents' beliefs	-.009	.020	-.009			-.101	.057	-.038		
Parents' expectations	.049***	.011	.104			.035	.030	.026		
Parents' exchange orientation	-.006	.012	-.012			-.052	.034	-.035		

Continued on next page

(Table 5 continued)

Models	Home Environment					Cumulative Investment				
	b	se	ß	ΔR^2	ΔF	b	se	ß	ΔR^2	ΔF
Step 1				.059	33.677***				.008	4.203**
Mothers highest level of education	.241**	.028	.184			.063***	.016	.088		
Maternal depression	-.088	.072	-.026			-.022	.041	-.012		
Family Income	.335***	.070	.105			-.041	.039	-.024		
Perception of availability of good child care	.169^{+}	.087	.041			.054	.049	.024		
Step 2				.007	5.020**				.009	6.633***
Constant	3.874	.202				2.763	.114			
Parents' beliefs	.037	.093	.008			.025	.053	.010		
Parents' expectations	.163***	.050	.071			.121***	.028	.096		
Parents' exchange orientation	.111*	.055	.044			-.019	.031	-.014		

Note. N=2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; $^{+}p < .10$ (2-tailed)
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 6. *Testing Exchange Orientation as a Moderator of Parents' Beliefs and Expectations in Predicting of Parenting Investment*

Models	Type of Care					Quality of Care				
	b	se	Odds Ratio	ΔR^2	Δ2LL	b	se	ß	ΔR^2	ΔF
Step 1				.016	1.412**				.016	4.993***
Mothers highest level of education	.036	.041	1.037			-.073	.106	-.016		
Maternal depression	-.086	.107	.917			.267	.279	.022		
Family Income	-.251*	.099	.778			-1.088	.255	-.096		
Perception of availability of good child care	.393***	.117	1.481			.634	.318	.043		
Parents' beliefs	-.009	.132	.991			.707	.342	.045		
Parents Exchange Orientation	.072	.079	1.075			-.082	.203	-.009		
Parents' Expectations	.143*	.069	1.154			.383	.182	.047		
Step 2a				.001	1.988				.001	1.600
Constant	1.226	.285	3.409			21.955	.739			
Parents' beliefs	.016	.133	1.016			.761	.344	.048		
Parents' exchange orientation	.074	.079	1.077			-.078	.203	-.009		
Parents' Expectations	.010	.136	1.010			-.005	.356	-.001		
Beliefs*expectations	.177	.155	1.194			.515	.407	.055		
Step 2b				0.006	12.433*				.004	4.359*
Constant	1.164	.285	3.202			21.810	.742			
Parents' beliefs	-.004	.132	.996			.716	.342	.045		
Parents' exchange orientation	.285	.178	1.330			.054	.454	.006		
Parents' expectations	.137	.069	1.147			.396	.182	.049		
Beliefs*exchange orientation	-.283	.194	.754			-.205	.497	-.021		
Expectations*exchange orientation	-.215*	.092	.806			-.684**	.239	-.062		

Continued on next page

(Table 6 continued)

Models	Preference for Care that Prepares for Kinder					Parents' Involvement				
	b	se	ß	ΔR^2	ΔF	b	se	ß	ΔR^2	ΔF
Step 1				.012	3.732***				.021	6.647***
Mothers highest level of education	-.006	.006	-.024			.054**	.018	.069		
Maternal depression	-0.004	.016	-.005			.019	.047	.009		
Family Income	-0.019	.015	-.029			.154***	.043	.081		
Perception of availability of good child care	.032+	.018	.037			-.107*	.053	-.043		
Parents' beliefs	-.009	.020	-.009			-.101+	.057	-.038		
Parents Exchange Orientation	-.006	.012	-.012			-.052	.034	-.035		
Parents' Expectations	.049***	.011	.104			.035	.030	.026		
Step 2a				.000	.337				.003	6.222**
Constant	2.913	.043				2.553	.124			
Parents' beliefs	-.010	.020	-.011			-.119	.058	-.045		
Parents' exchange orientation	-.006	.012	-.013			-.053	.034	-.036		
Parents' Expectations	.059	.021	.126			.163	.060	.119		
Beliefs*expectations	-.014	.024	-.025			-.170	.068	-.107		
Step 2b				.001	0.591				0.001	1.310
Constant	2.908	.043				2.554	.124			
Parents' beliefs	-.009	.020	-.010			-.101	.057	-.038		
Parents' exchange orientation	-.009	.026	-.018			-.065	.076	-.043		
Parents' expectations	.049	.011	.105			.034	.030	.025		
Beliefs*exchange orientation	.003	.029	.005			.019	.083	.011		
Expectations*exchange orientation	-.015	.014	-.024			.063	.040	.034		

Continued on next page

(Table 6 continued)

Models	Home Environment					Cumulative Investment				
	b	se	ß	ΔR^2	ΔF	b	se	ß	ΔR^2	ΔF
Step 1				.065	21.503***				.017	5.263***
Mothers highest level of education	.219***	.029	.168			.046**	.016	.065		
Maternal depression	-.119	.076	-.035			0	.043	.000		
Family Income	.326***	.070	.102			-.053	.039	-.030		
Perception of availability of good child care	.174*	.087	.042			.055	.049	.024		
Parents' beliefs	.037	.093	.008			.025	.053	.010		
Parents Exchange Orientation	.111*	.055	.044			-.019***	.031	-.014		
Parents' Expectations	.163***	.050	.071			.121	.028	.096		
Step 2a				0	.155				0	.347
Constant	3.878	.202				2.767	.114			
Parents' beliefs	.032	.094	0.007			.021	.053	.009		
Parents' exchange orientation	.111	.055	0.044			-.019	.031	-.014		
Parents' Expectations	.196	.097	0.086			.149	.055	.119		
Beliefs*expectations	-.044	.111	-0.017			-.037	.063	-.025		
Step 2b				.002	2.247^{+}				0	.333
Constant	3.886	.203				2.752	.115			
Parents' beliefs	.045	.094	.010			.028	.053	.012		
Parents' exchange orientation	.226	.124	.090			.021	.070	.015		
Parents' expectations	.159	.050	.070			.121	.028	.097		
Beliefs*exchange orientation	-.134	.136	-.049			-.049	.077	-.032		
Expectations*exchange orientation	.129*	.065	.041			-.016	.037	-.009		

Note. N=2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; $^{+}p < .10$ (2-tailed)
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 7. *Testing Exchange Orientation as Moderator in Predicting Investment Using Categorical Predictors of Beliefs and Expectations*

Models	Type of Care					Quality of Care				
	b	se	Odds Ratio	ΔR^2	Δ2LL	b	se	ß	ΔR^2	ΔF
Step 1				.013	4.389**				.012	5.054***
Constant	1.181	.259	3.257							
Mothers highest level of education	.056	.040	1.057			-.014	.104	-.003		
Maternal depression	-.1	.107	.905			.191	.279	.016		
Family Income	-.237*	.099	.789			-1.064***	.255	-.094		
Perception of availability of good child care	.388***	.117	1.474			.663*	.318	.045		
Parents' exchange orientation	.071	.079	1.074			-.097	.203	-0011		
Step 2				.009	6.938**				.007	4.816**
Constant	1.422	.270	4.147			23.083	.698			
Parents' exchange orientation	.073	.079	1.076			-.083	.203	-.009		
HBLE Group	-.433***	.123	.649			-.979**	.322	-.070		
LBHE Group	-.135	.175	.874			-1.059*	.447	-.053		
LBLE Group	-.246	.191	.782			-1.214*	.501	-.054		
Step 3				.005	4.585*				.005	3.347*
Constant	1.354	.271	3.875			22.977	.699			
Parents' exchange orientation	-.094	.109	.911			-.253	.273	-.028		
HBLE Group	-.424	.123	.655			-.970	.321	-.069		
LBHE Group	-.129	.175	.879			-1.002	.447	-.050		
LBLE Group	-.249	.194	.779			-1.386	.504	-.062		
HBLE*exchange orientation	.255	.169	1.291			.288	.442	.017		
LBHE* exchange orientation	.164	.260	1.179			-.796	.662	-.028		
LBLE *exchange orientation	.738**	.281	2.091			1.908**	.709	.063		

Continued on next page

(Table 7 continued)

Models	Preference for Care that Prepares for Kinder					Parents' Involvement				
	b	se	ß	ΔR^2	ΔF	b	se	ß	ΔR^2	ΔF
Step 1				.002	.885				.019	8.483***
Mothers highest level of education	.000	.006	.000			.057**	.017	.073		
Maternal depression	-.008	.016	-.012			.021	.047	.010		
Family Income	-.014	.015	-.022			.159***	.043	.083		
Perception of availability of good child care	.030	.018	.035			-.113*	.053	-.045		
Parents' exchange orientation	-.007	.012	-.013			-.051	.034	-.034		
Step 2				0.013	9.223***				.004	2.749*
Constant	2.932	.040				2.402	.117			
Parents' exchange orientation	-.007	.012	-.013			-.053	.034	-.035		
HBLE Group	-.087***	.019	-.108			.05	.054	.021		
LBHE Group	.008	.026	.007			.208**	.075	.062		
LBLE Group	-.082**	.029	-.064			-.011	.084	-.003		
Step 3				.001	.861				.001	.514
Constant	2.928	.041				2.412	.117			
Parents' exchange orientation	-.022	.016	-.042			-.025	.046	-.017		
HBLE Group	-.086	.019	-.107			.049	.054	.021		
LBHE Group	.008	.026	.007			.205	.075	.061		
LBLE Group	-.081	.029	-.063			-.003	.085	-.001		
HBLE*exchange orientation	.040	.026	.042			-.064	.074	-.023		
LBHE* exchange orientation	.023	.038	.014			.011	.111	.002		
LBLE *exchange orientation	.009	.041	.005			-.116	.119	-.023		

Continued on next page

(Table 7 continued)

Models	Home Environment					Cumulative investment				
	b	se	ß	ΔR^2	ΔF	b	se	ß	ΔR^2	ΔF
Step 1				.06	27.746***				.008	3.443**
Mothers highest level of education	.241***	.028	.185			.063***	.016	.087		
Maternal depression	-.137^{+}	.076	-.040			-.013	.043	-.007		
Family Income	.340***	.070	.107			-.042	.039	-.024		
Perception of availability of good child care	.171*	.087	.041			.054	.049	.023		
Parents' exchange orientation	.109*	.056	.044			-.020	.031	-.015		
Step 2				.003	2.284^{+}				.012	8.709***
Constant	3.942	.191				2.858	.108			
Parents' exchange orientation	.109	.056	.044			-.020	.031	-.014		
HBLE Group	-.164^{+}	.088	-.042			-.208***	.050	-.096		
LBHE Group	.004	.122	.001			-.002	.069	.000		
LBLE Group	-.290*	.137	-.046			-.276***	.077	-.080		
Step 3				.003	2.554^{+}				0	.275
Constant	3.961	.192				2.851	.108			
Parents' exchange orientation	.176	.075	.071			-.032	.042	-.023		
HBLE Group	-.165	.088	-.042			-.032	.042	-.023		
LBHE Group	-.013	.122	-.002			-.207	.050	-.096		
LBLE Group	-.279	.138	-.045			-.002	.069	-.001		
HBLE*exchange orientation	-.245*	.121	-.053			-.285	.078	-.083		
LBHE* exchange orientation	.217	.181	.027			.027	.102	.006		
LBLE *exchange orientation	-.196	.194	-.023			.096	.110	.020		

Note. N=2,150. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; $^{+}p < .10$ (2-tailed)
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 8a. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Ordinary Least Squares Regression (OLS) – White Sample*

Model	Type of Care			Quality of Care			Preference for Care that Prepares for Kinder			Parental Involvement			Home Learning Environment			Cumulative Investment		
	b	se	Odds Ratio	b	se	ß	b	se	ß	b	se	ß	Bb	se	ß	b	se	ß
(Constant)	1.53	.51	4.60	21.44	1.35		2.88	.08		2.56	.23		4.67	.38		2.78	.21	
Mothers' education	.06	.07	1.06	.25	.19	.05	-.01	.01	-.02	.10***	.03	.13	.19***	.05	.14	.09**	.03	.11
Maternal depression	-.26	.18	.77	-.65	.5	-.05	-.02	.03	-.03	-.06	.08	-.03	-.29	.14	-.08	-.15+	.08	-.08
Family income	-.33*	.17	.72	-.95*	.45	-.08	.02	.03	.03	.07	.07	.04	.18	.13	.05	-.05	.07	-.03
Availability of good care	.51**	.19	1.67	.6	.52	.04	.03	.03	.03	-.05	.09	-.02	.17	.15	.04	.08	.08	.04
Parents' beliefs	-.26	.22	.77	.61	.56	.04	-.01	.04	-.01	-.06	.09	-.02	.01	.16	.00	-.01	.09	-.00
Parents' expectations	.07	.12	1.07	-.40	.31	-.05	.01	.02	.03	.05	.05	.04	.20	.09	.09	.06	.05	.05
Parents' exchange orientation	.04	.15	1.04	-.3	.39	-.03	-.01	.02	-.02	-.07	.07	-.04	.12	.11	.04	-.03	.06	-.02
ΔR^2	0.029*			0.016+			0.004			0.029**			0.055**			0.027**		
ΔF	14.885			1.752			0.004			3.158			6.189			2.926		

Note. N=750. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; +$p < .10$ (2-tailed)

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 8b. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Ordinary Least Squares Regression (OLS) – Black Sample*

Model	Type of Care			Quality of Care			Preference for Care that Prepares for Kinder			Parental Involvement			Home Environment			Cumulative Investment		
	b	se	Odds Ratio	b	se	ß	b	se	ß	b	se	ß	b	se	ß	b	se	ß
(Constant)	.66	.59	1.93	22.37	1.39		3	.08		2.63	.25		2.75	.39		2.46	.21	
Mothers' education	.13	.1	1.13	.17	.22	.04	.00	.01	.01	.08^{+}	.04	.09	.36^{+}	.06	.25	.12***	.03	.16
Maternal depression	.05	.21	1.05	.46	.48	.04	-.02	.03	-.03	-.05	.09	-.02	.09	.13	.03	.1	.07	.06
Family income	-.20	.20	.82	-1.09*	.47	-.10	-.09***	.03	-.15	.1	.09	.05	.17	.13	.05	-.11	.07	-.07
Availability of good care	.4	.25	1.48	.48	.62	.03	-.01	.04	-.01	-.11	.11	-.04	.43	.17	.10	.05	.09	.02
Parents' beliefs	.19	.26	1.21	.06	.63	.00	.03	.04	.03	-.19	.11	-.07	.07^{+}	.18	.02	.08	.1	.03
Parents' expectations	.16	.14	1.18	.76*	.34	.1	.06**	.02	.12	.07	.06	.05	.06	.09	.03	.15**	.05	.12
Parents' exchange orientation	.08	.15	1.08	-.28	.35	-.04	.01	.02	.03	.00	.06	.00	.14	.1	.06	-.02	.05	-.02
ΔR^2		0.021			0.020^{+}			0.034**			0.026**			0.084**			0.050***	
ΔF		7.525			1.735			2.943			2.179			7.653			4.366	

Note. N=600. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; $^{+}p < .10$ (2-tailed)

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 8c. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Ordinary Least Squares Regression (OLS) – Hispanic Sample*

Model	Type of Care			Quality of Care			Preference for Care that Prepares for Kinder			Parental Involvement			Home Environment			Cumulative Investment		
	b	se	Odds Ratio	b	se	ß	b	se	ß	b	se	ß	b	se	ß	b	se	ß
(Constant)	1.09	.53	2.98	20.76	1.5		2.82	.07		2.59	.23		3.89	.36		2.94	.22	
Mothers' education	-.02	.08	.98	-.30	.22	-.06	-.01	.01	-.03	.03	.04	.04	.16	.05	.14	-.01	.03	-.01
Maternal depression	-.05	.22	.95	.54	.61	.04	.04	.03	.06	.08	.1	.04	.01	.15	.00	.01	.09	.01
Family income	-.09	.21	.92	-.65	.59	-.05	.01	.03	.02	.19*	.09	.1	.36*	.14	.12	.02	.09	.01
Availability of good care	.15	.25	1.16	.62	.7	.04	.05	.03	.07	-.15	.11	-.06	-.05	.17	-.01	-.07	.10	-.03
Parents' beliefs	.31	.28	1.36	1.9*	.81	.11	.00	.04	.00	-.1	.13	-.04	.1	.19	.02	.09	.12	.03
Parents' expectations	.07	.15	1.08	.35	.41	.04	.02	.02	.06	.01	.06	.01	.21	.1	.1	.05	.06	.04
Parents' exchange orientation	.04	.16	1.04	-.10	.43	-.01	-.03	.02	-.08	-.08	.07	-.05	.08	.10	.04	-.05	.06	-.04
ΔR^2		0.007			0.025+			0.017			0.023+			0.056+			0.006	
ΔF		2.431			1.792			1.201			1.664			4.221			0.431	

Note. N=600. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; +$p < .10$ (2-tailed)
Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 8d. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Ordinary Least Squares Regression (OLS) – Native American Sample*

Model	Type of Care			Quality of Care			Preference for Care that Prepares for Kinder			Parental Involvement			Home Environment			Cumulative Investment		
	b	se	Odds Ratio	b	se	ß	b	se	ß	b	se	ß	b	se	ß	b	se	ß
(Constant)	2.86	1.19	17.52	24.72	2.43		2.71	.17		1.95	.43		4.54	.65		2.86	.42	
Mothers' education	-.18	.17	.84	-.95**	.36	-.21	.02	.02	.06	-.02	.06	-.02	.07	.1	.06	-.06	.06	-.08
Maternal depression	.19	.45	1.20	1.60+	.93	.14	.03	.06	.03	.20	.17	.10	-.16	.25	-.05	.17	.16	.09
Family income	-.36	.40	.7	-.75	.88	-.07	.03	.06	.04	.52***	.16	.26	-.16	.23	-.05	.08	.15	.04
Availability of good care	.25	.43	1.28	.287	.97	.02	.06	.07	.06	-.06	.17	-.03	.11	.26	.03	.07	.17	.03
Parents' beliefs	-.88	.58	.42	-1.21	1.05	-.09	-.1	.07	-.09	-.07	.19	-.03	.15	.28	.04	-.26	.18	-.11
Parents' expectations	.71**	.28	2.02	1.13+	.62	.14	.16***	.04	.3	-.05	.11	-.04	.43***	.16	.21	.26*	.11	.2
Parents' exchange orientation	.18	.35	1.19	-.44	.76	-.05	-.06	.05	-.09	.13	.13	.08	-.00	.20	-.00	-.01	.13	-.01
ΔR^2	0.096+			0.084*			0.129***			0.072+			0.060+			0.055+		
ΔF	11.107			2.255			3.652			1.922			1.580			1.437		

Note. N=200. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; +$p < .10$ (2-tailed)

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 8e. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Ordinary Least Squares Regression (OLS) – Asian Sample*

Model	Type of Care			Quality of Care			Preference for care that prepared for Kinder			Parental Involvement			Home Environment			Cumulative Investment		
	b	se	Odds Ratio	b	se	ß	b	se	ß	b	se	ß	b	se	ß	b	se	ß
(Constant)	-.57	1.6	.57	15.18	3.51		3	.24		1.95	.59		5.89	1.19		1.87	.57	
Mothers' education	-.11	.19	.9	-.47	.39	-.12	0	.03	-.01	.07	.07	.11	.19	.13	.15	.03	.06	.04
Maternal depression	.2	.64	1.22	1.83	1.38	.13	.07	.09	.08	.36	.23	.16	-.43	.47	-.1	.24	.22	.11
Family income	.69	.54	2	1.53	1.23	.13	-.13	.08	-.16	.06	.21	.03	.38	.42	.09	.27	.20	.14
Availability of good care	.24	.70	1.23	-.37	1.71	-.02	-.01	.12	-.01	-.21	.29	-.07	-.37	.58	-.06	-.14	.28	-.05
Parents' beliefs	1.49*	.6	4.45	5***	1.52	.32	-.09	.10	-.09	-.18	.26	-.07	-.23	.51	-.05	.52*	.25	.21
Parents' expectations	.2	.44	1.22	.74	.99	.07	.09	.07	.14	.03	.17	.02	.32	.33	.1	.14	.16	.09
Parents' exchange orientation	-.03	.39	.967	.26	.85	.03	.01	.06	.02	-.29	.14[a]	-.21	.02	.29	.01	-.18	.14	-.14
ΔR^2		0.117			0.131*			0.054			0.080			0.075			0.077	
ΔF		8.017			2.135			0.809			1.225			1.143			1.174	

Note. N=100. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; $^{+}p < .10$ (2-tailed)

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

Table 8f. *Testing Parents' Beliefs and Expectations as Predictors of Investment Using Ordinary Least Squares Regression (OLS) – Multi-racial Sample*

Model	Type of Care			Quality of Care			Preference for care that prepared for Kinder			Parental Involvement			Home Environment			Cumulative Investment		
	b	se	Odds Ratio	b	se	ß	b	se	ß	b	se	ß	b	se	ß	b	se	ß
(Constant)	-1.12	3.12	.33	23.41	8.94		2.17	.59		2.55	1.21		5.04	2.04		.92	1.57	
Mothers' education	.69	.40	1.99	-.13	1.11	-.03	-.06	.07	-.16	-.19	.15	-.24	.27	.25	.19	.08	.19	0.09
Maternal depression	.11	.92	1.11	.86	2.69	.08	.19	.18	.24	.17	.37	.10	-1.22^{+}	.61	-.40	.42	.47	0.22
Family income	.24	.93	1.28	-2.34	2.60	-.22	.39	.17	.51	.01	.35	.01	1.14^{+}	.59	.38	.56	.46	0.29
Availability of good care	-.2	.99	.82	-3.44	2.97	-.25	.02	.2	.02	-.05	.40	-.02	-.85	.68	-.23	-.11	.52	-0.05
Parents' beliefs	-1.73	1.47	.18	1.82	3.76	.11	-.13	.25	-.11	.84^{+}	.51	.33	-.29	.86	-.07	-.33	.66	-0.12
Parents' expectations	-.26	.86	.77	2.01	2.66	.18	.33	.18	.43	.58^{+}	.36	.34	-.30	.61	-.10	.54	.47	0.28
Parents' exchange orientation	-.72	.70	.49	1.13	2.06	.13	-.03	.14	-.05	.78^{a}	.28	.56	.08	.47	.04	.23	.36	0.15
ΔR^2		0.251			0.164			0.272			0.383^{+}			0.427^{+}			0.185	
ΔF		5.561			0.531			1.017			1.686			2.025			0.615	

Note. N=50. In accordance with NCES policies, all unweighted sample sizes are rounded to the nearest 50.** $p < .01$; * $p < .05$; $^{+}p < .10$ (2-tailed)

Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month—Preschool Restricted-Use Data File (NCES 2008-024)

APPENDIX B. FIGURES

Figure 1. *Prediction of Use of Center-based Care (IV = Expectations)*

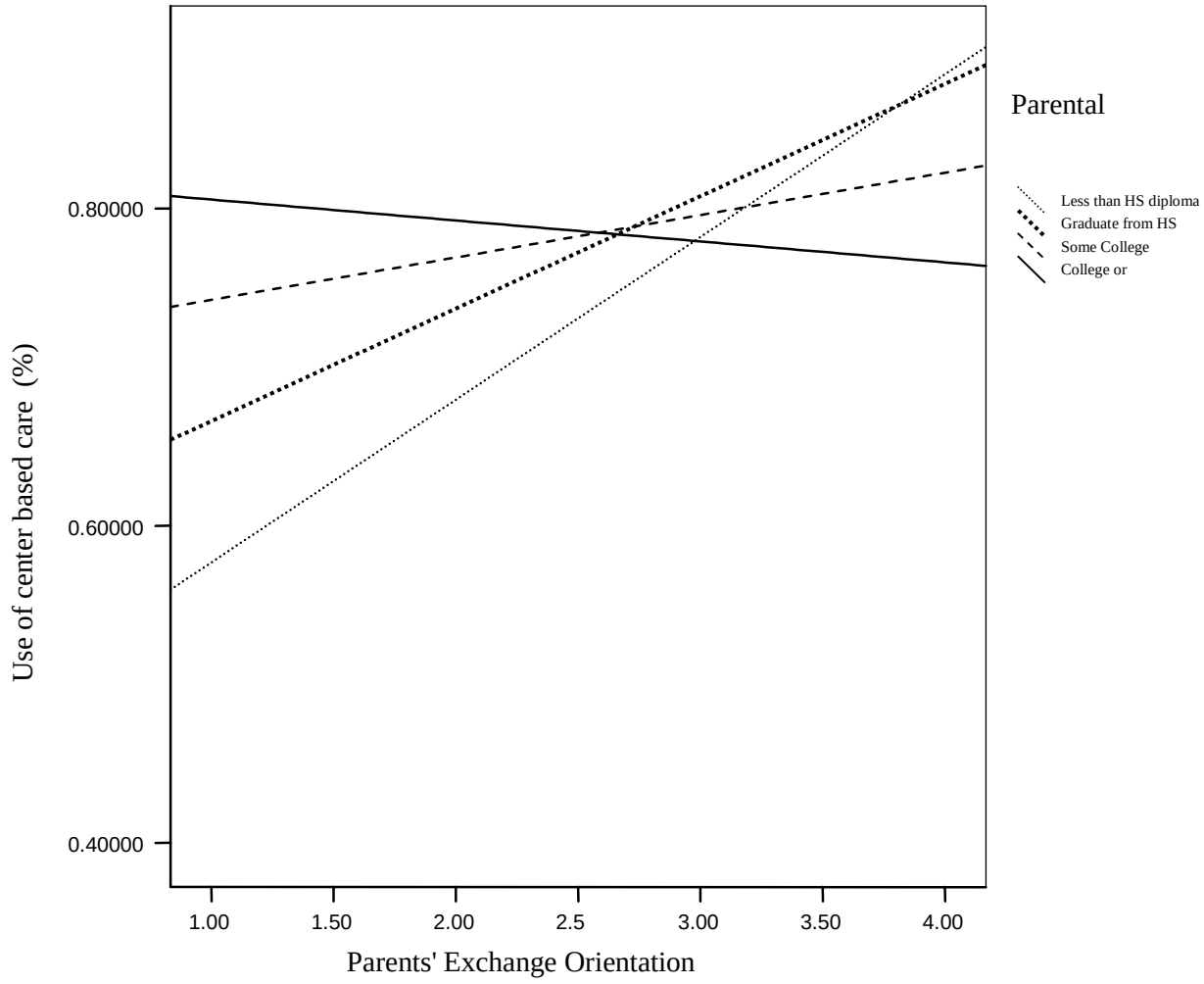

Figure 2. *Prediction of Quality of Early Education (IV = Expectations)*

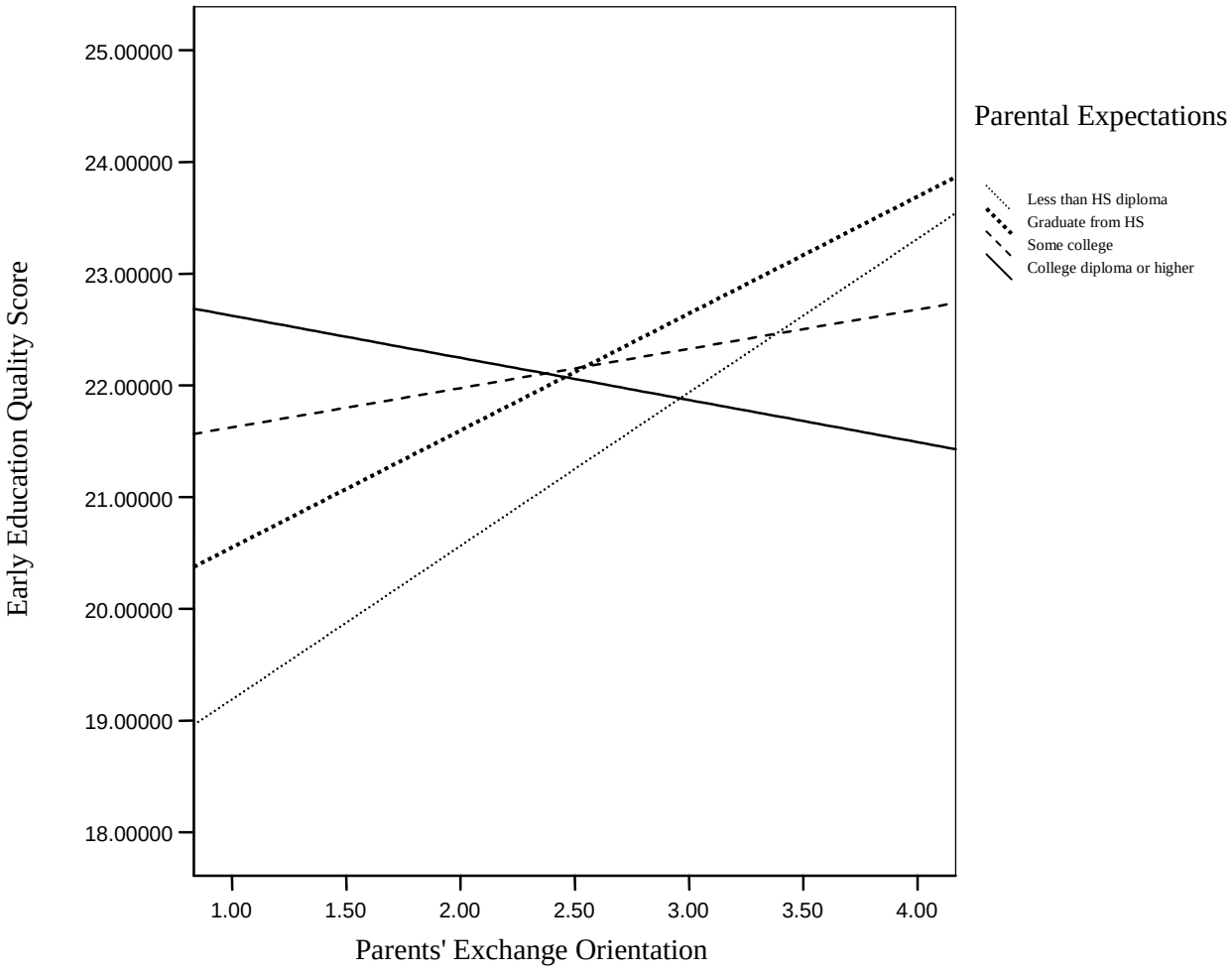

Figure 3. *Prediction of Home Environment Quality (IV = Expectations)*

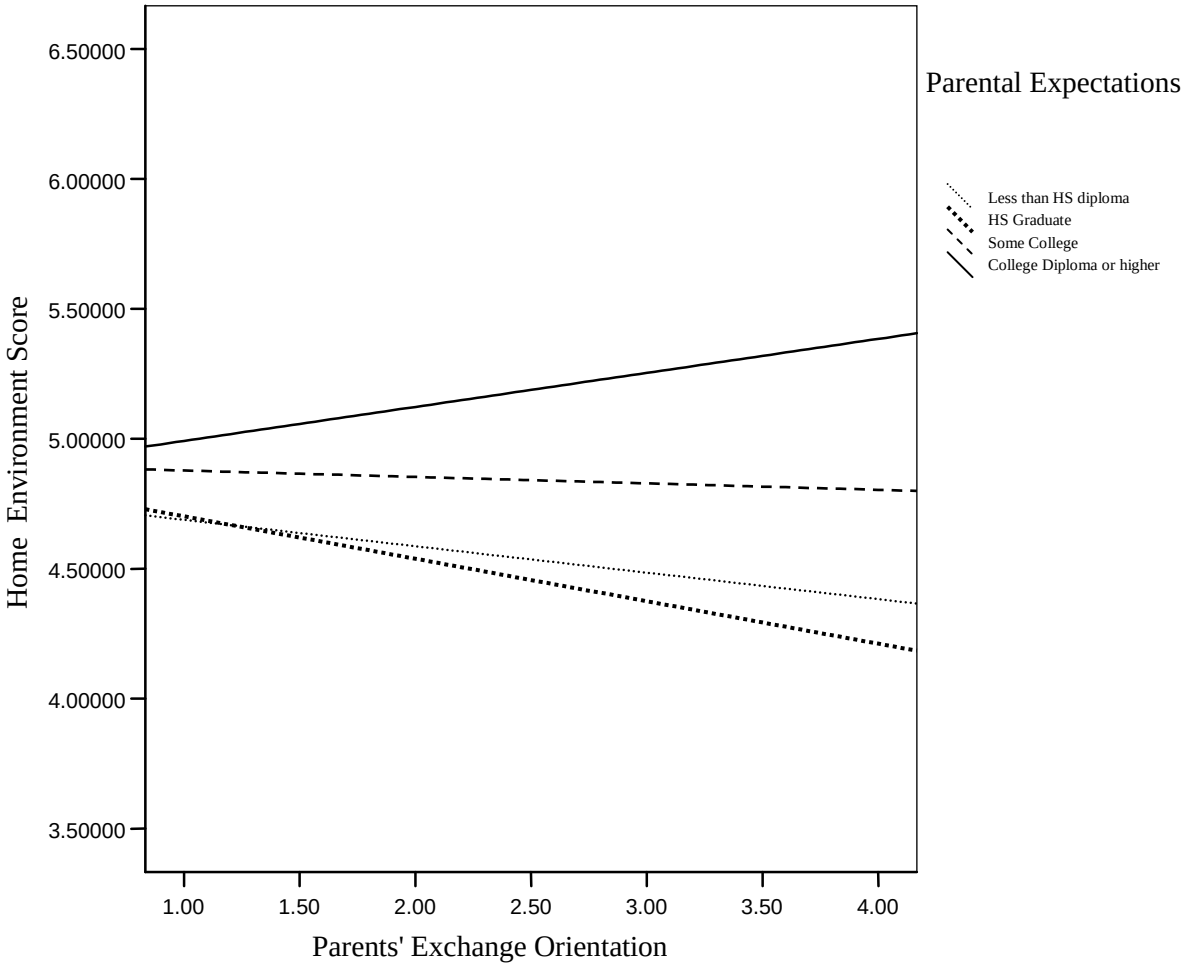

Figure 4. *Prediction of Parenting Involvement (BxE)*

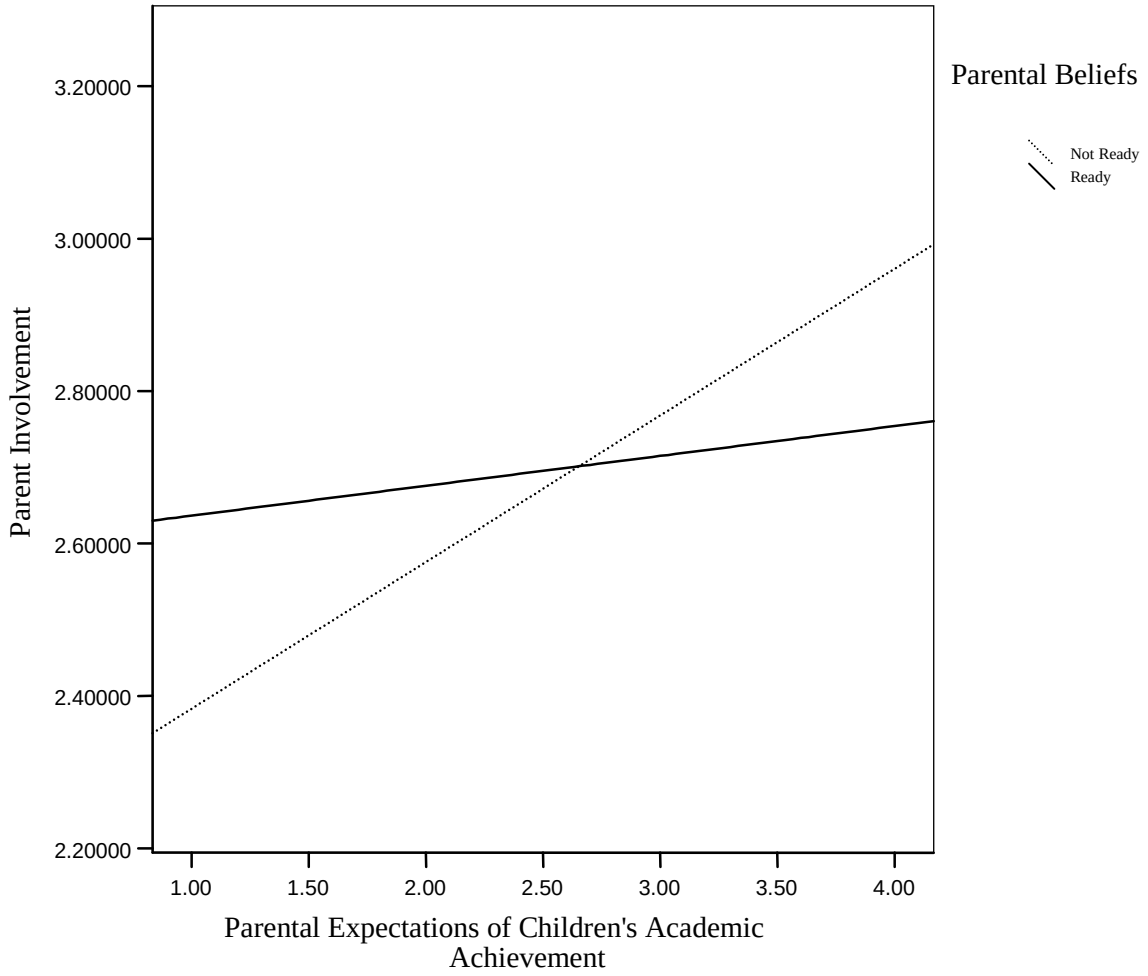

Figure 5. *Prediction of Use of Center-based Care (Categorical IV)*

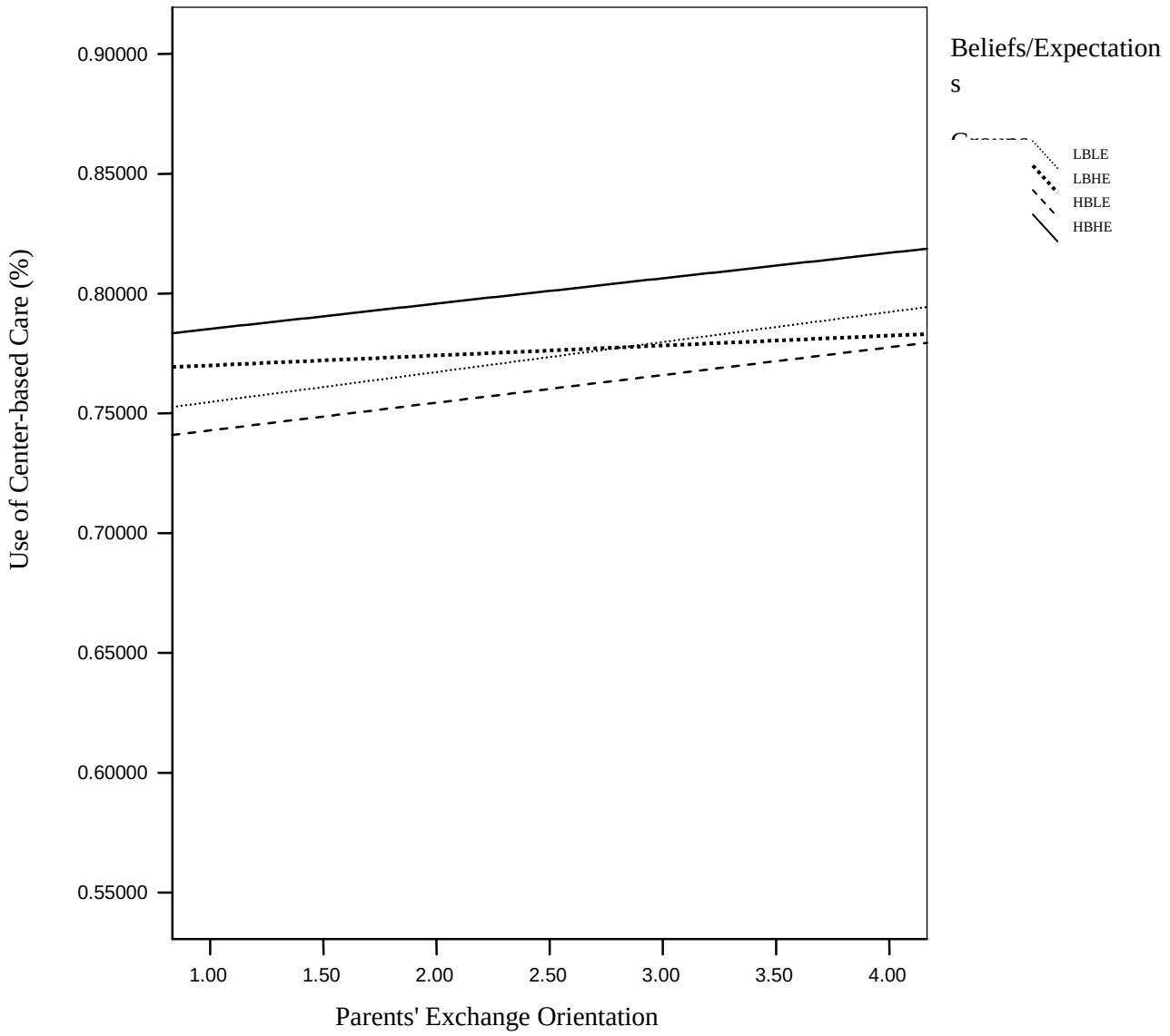

Figure 6. *Prediction of Quality of Early Education (Categorical IV)*

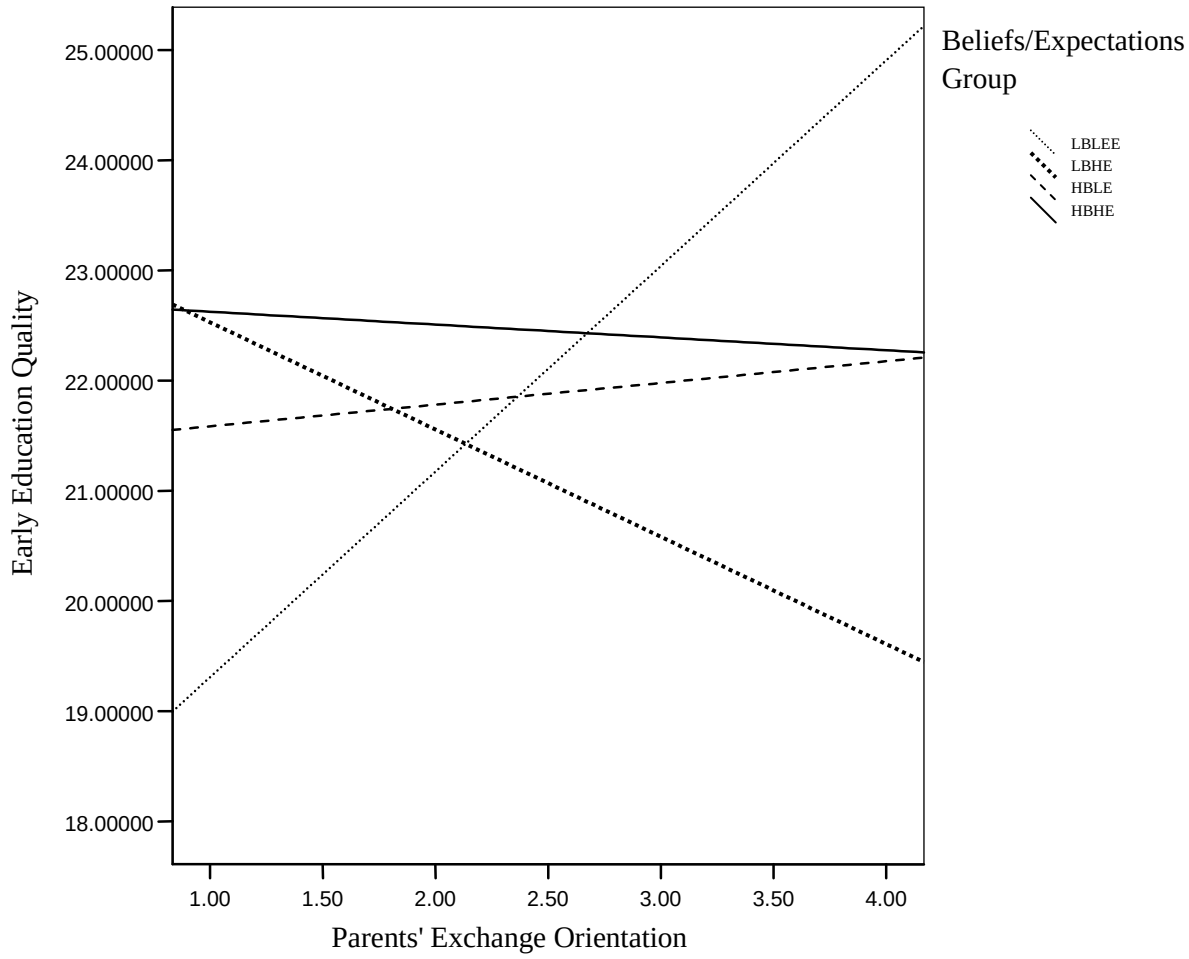

Figure 7. *Prediction of Home Environment Quality (Categorical IV)*